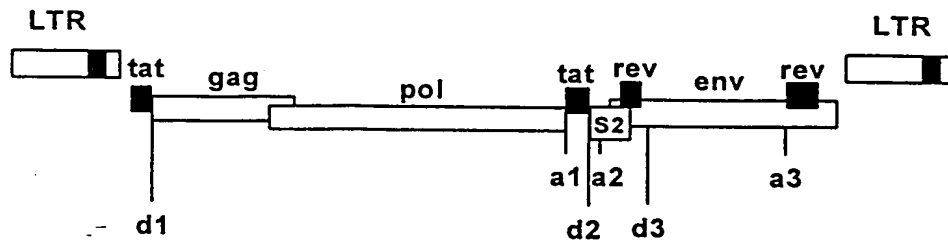
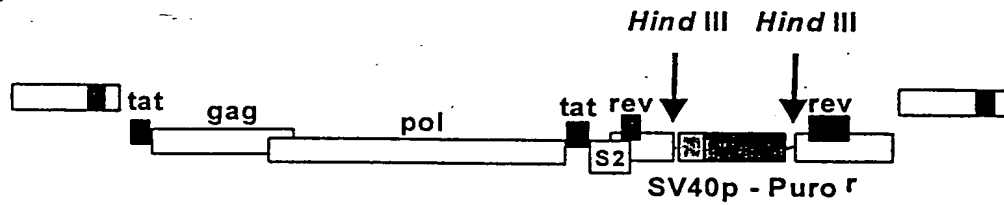


Figure 1

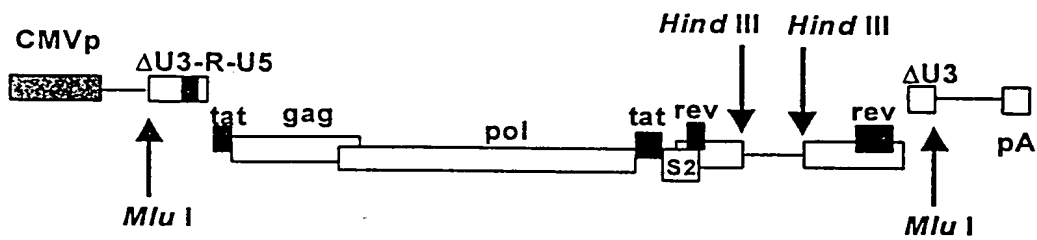
EIAV genome



pESP



pONY3



pONY2.1nls/lacZ

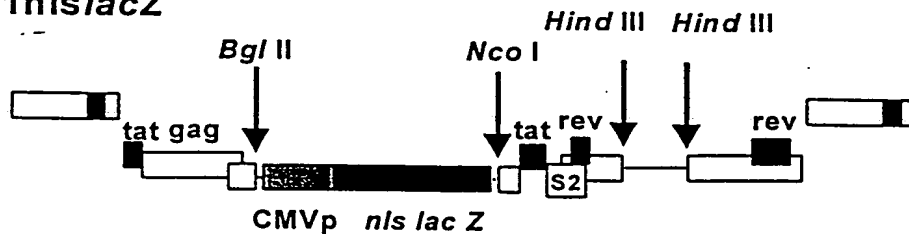
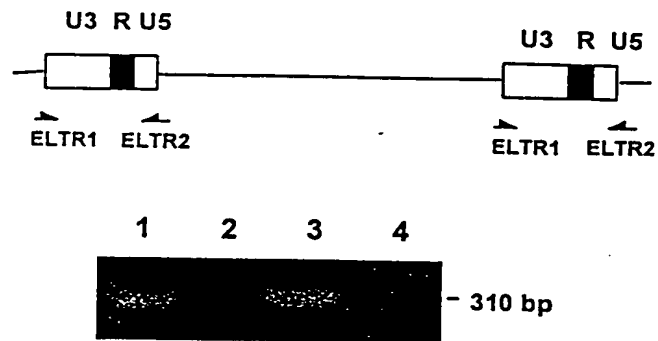


Figure 2

A. LTR



B. pol

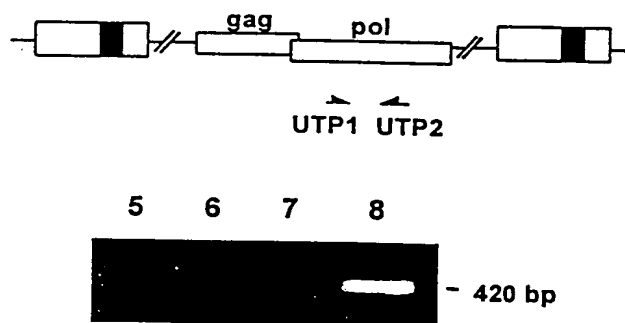
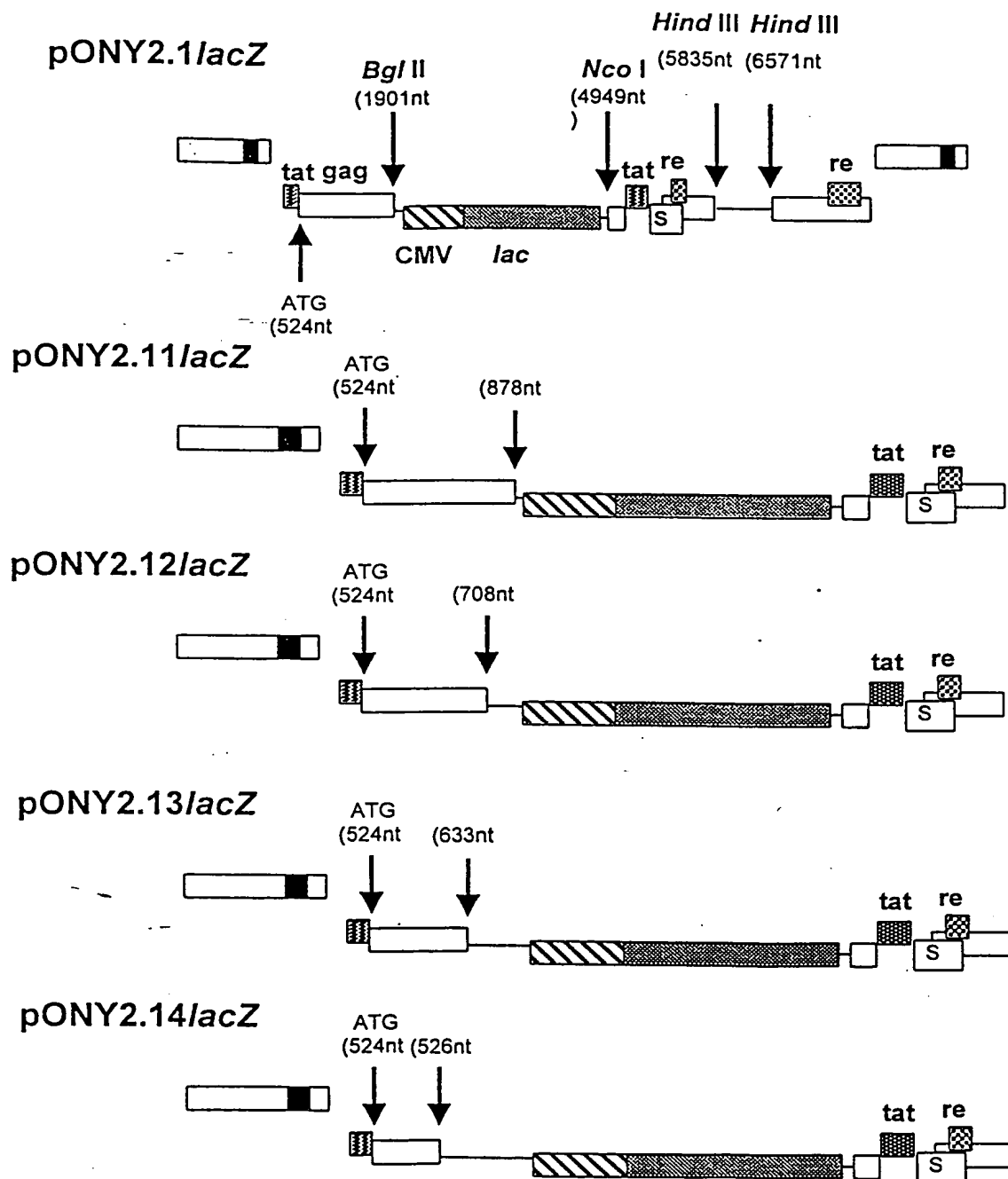
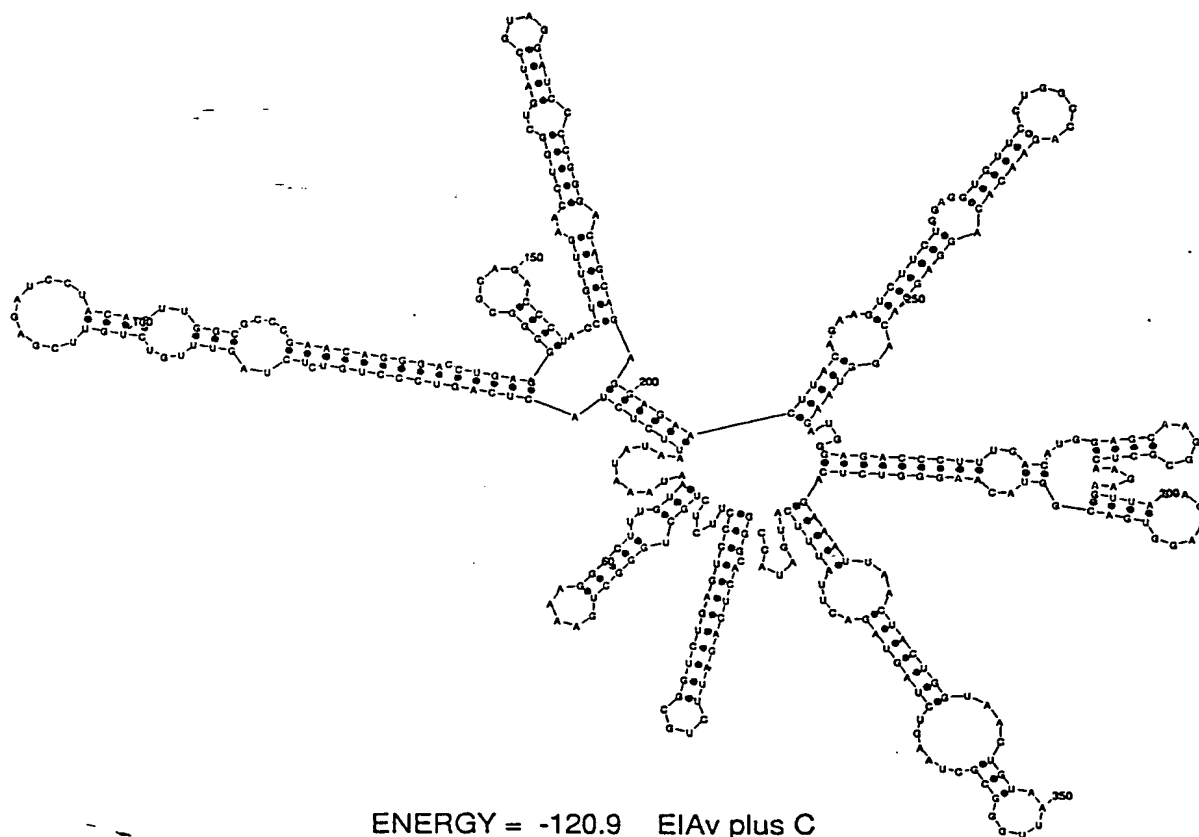


Figure 3





ENERGY = -120.9 EIAv plus C

EIAV Vector Genomes

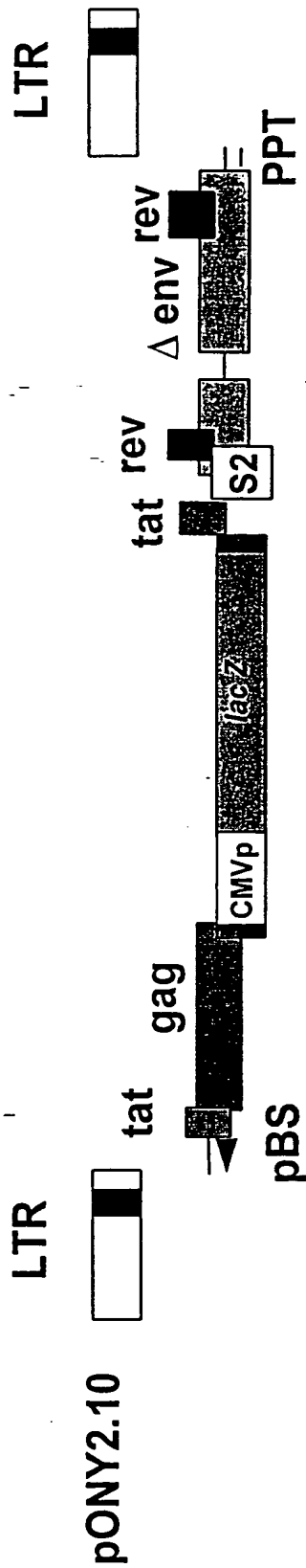
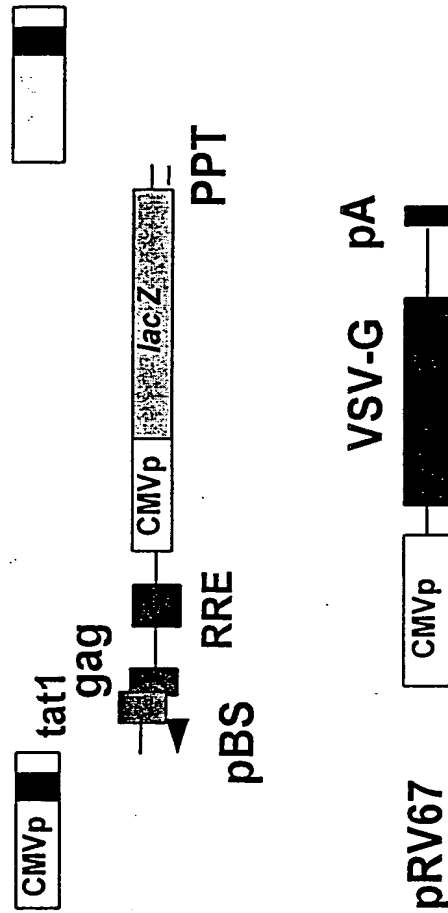
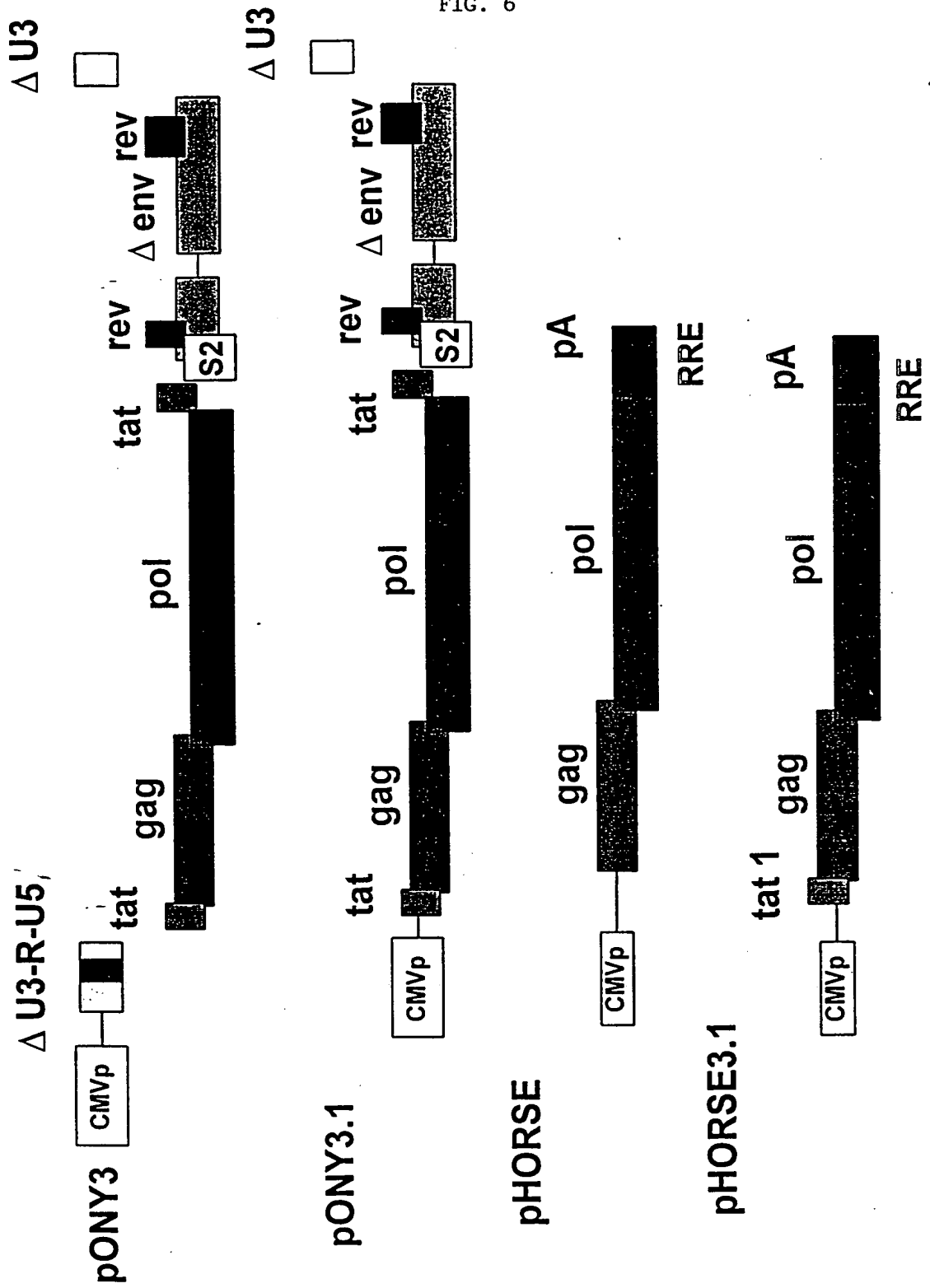


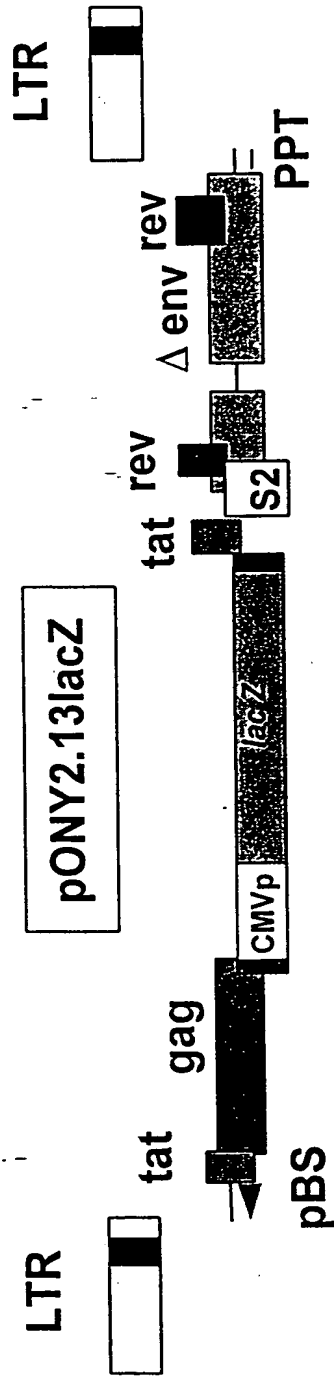
FIG. 5



EIAV gagpol Constructs



EIAV Vector S2 Mutant



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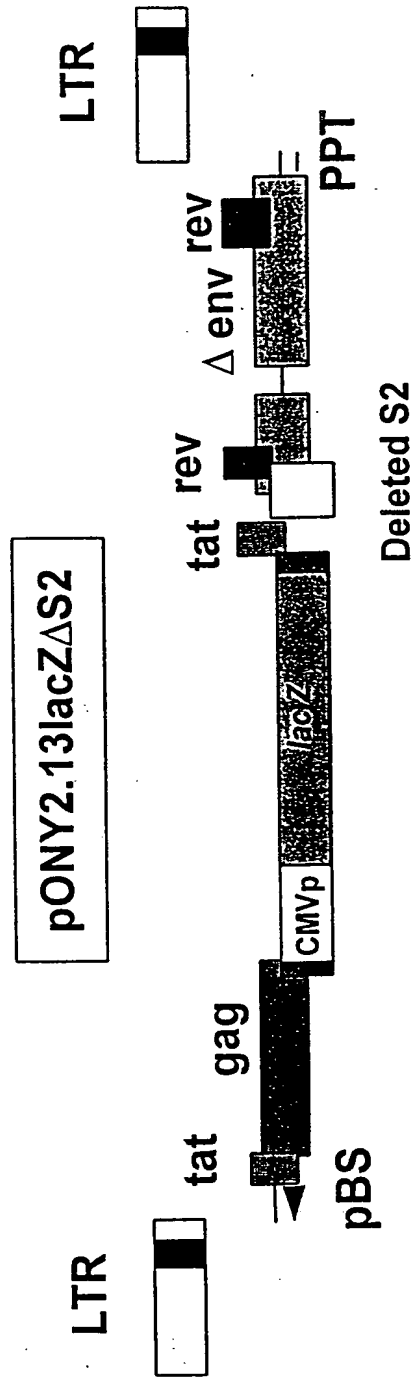


FIG. 7

EIAV gagpol S2 and dUTPase Mutants

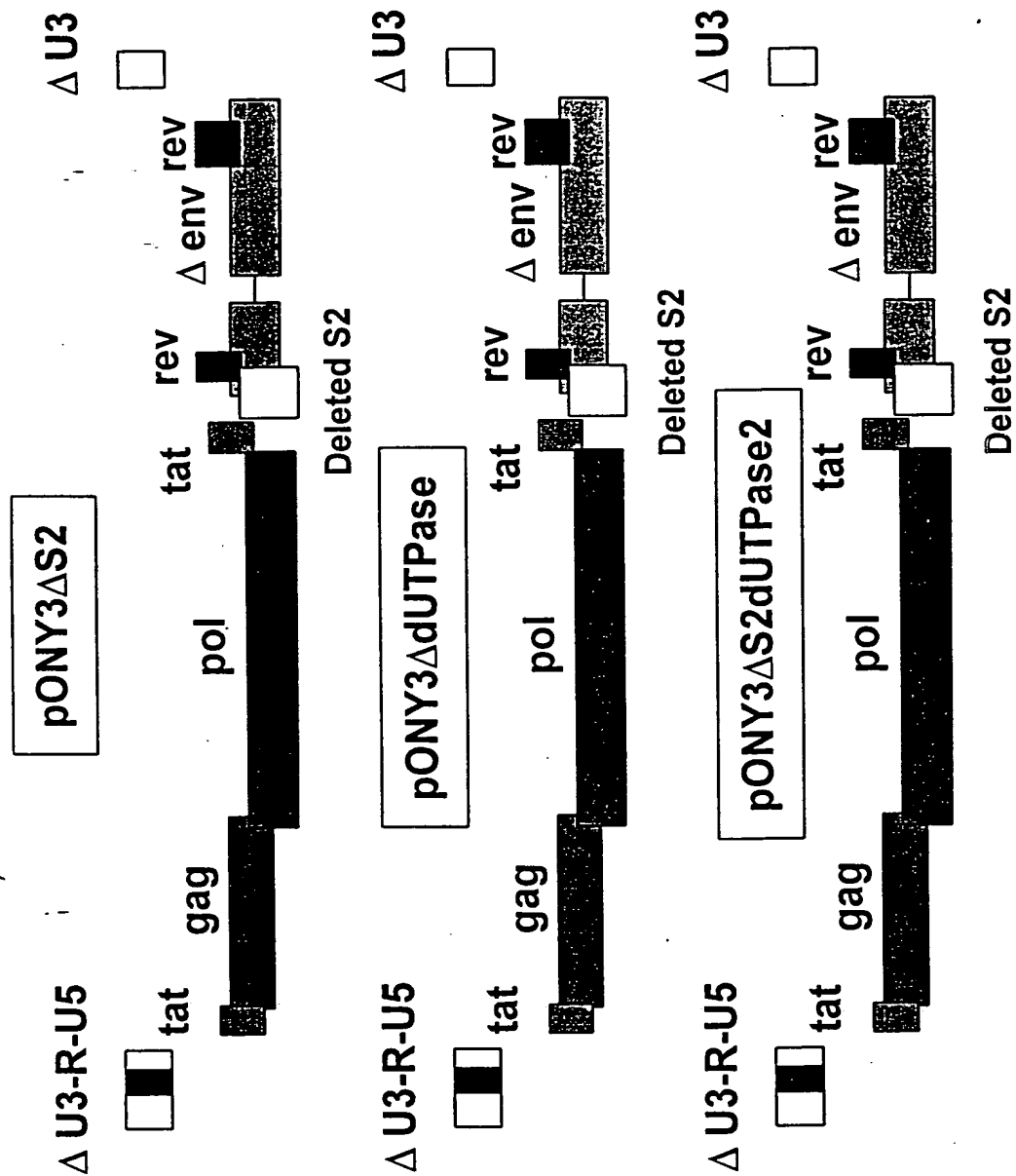


FIG. 8

ELAV Minimal System

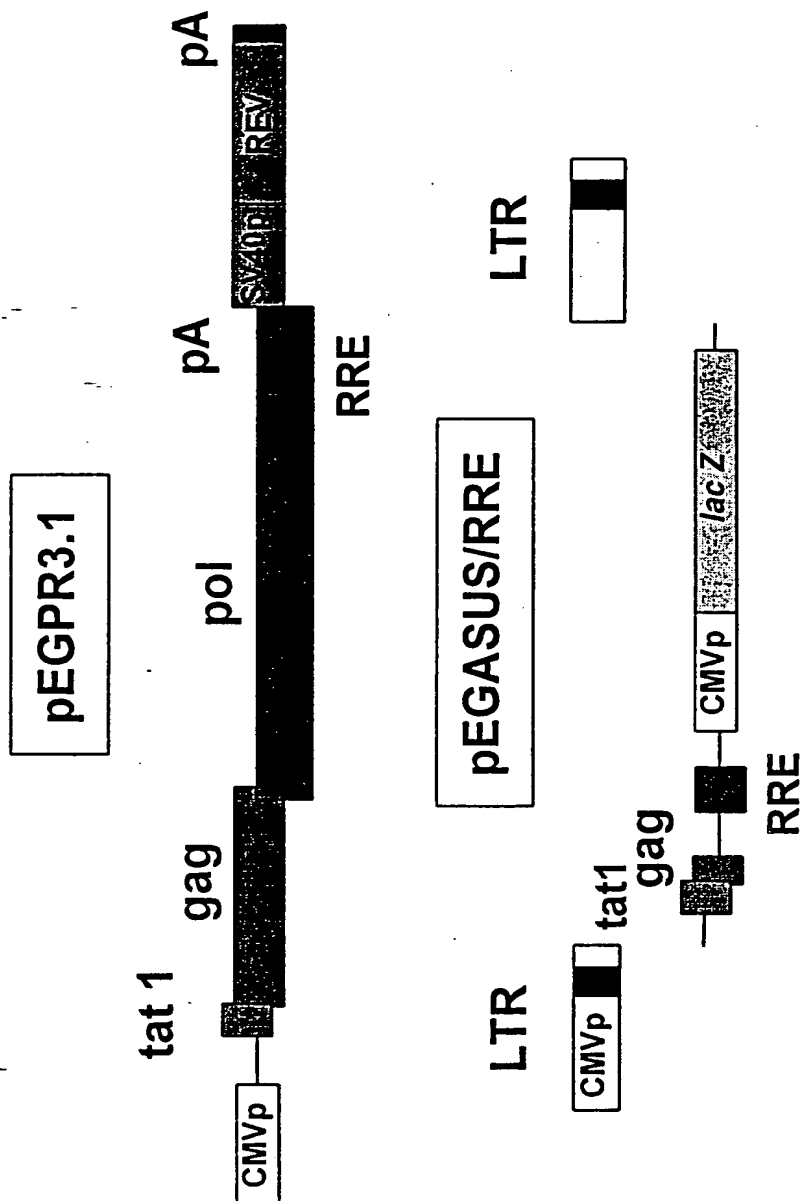
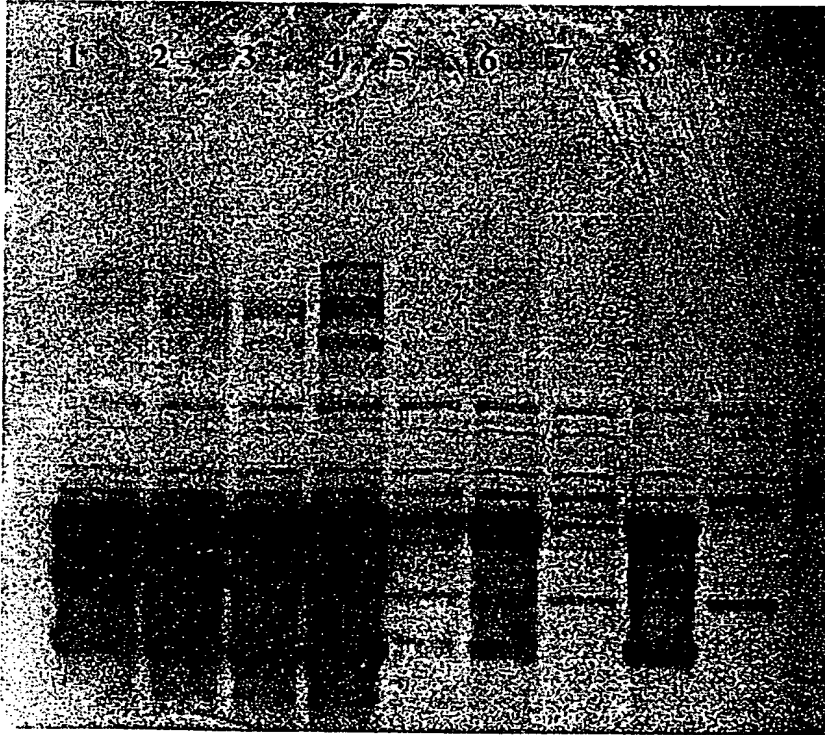


FIG. 9

FIG. 10



Titres
(i.f.u./ml)

1. pONY3.0 + pCI-Neo	(1.0×10^5)
2. pONY3.0 + pCI-Rev	(8.0×10^4)
3. pONY3.1 + pCI-Neo	(2.0×10^5)
4. pONY3.1 + pCI-Rev	(1.8×10^5)
5. pHORSE + pCI-Neo	(1.0×10^1)
6. pHORSE + pCI-Rev	(2.0×10^3)
7. pHORSE3.1 + pCI-Neo	(2.0×10^2)
8. pHORSE3.1 + pCI-Rev	(8.0×10^4)
9. pCI-Neo	(<1.0)

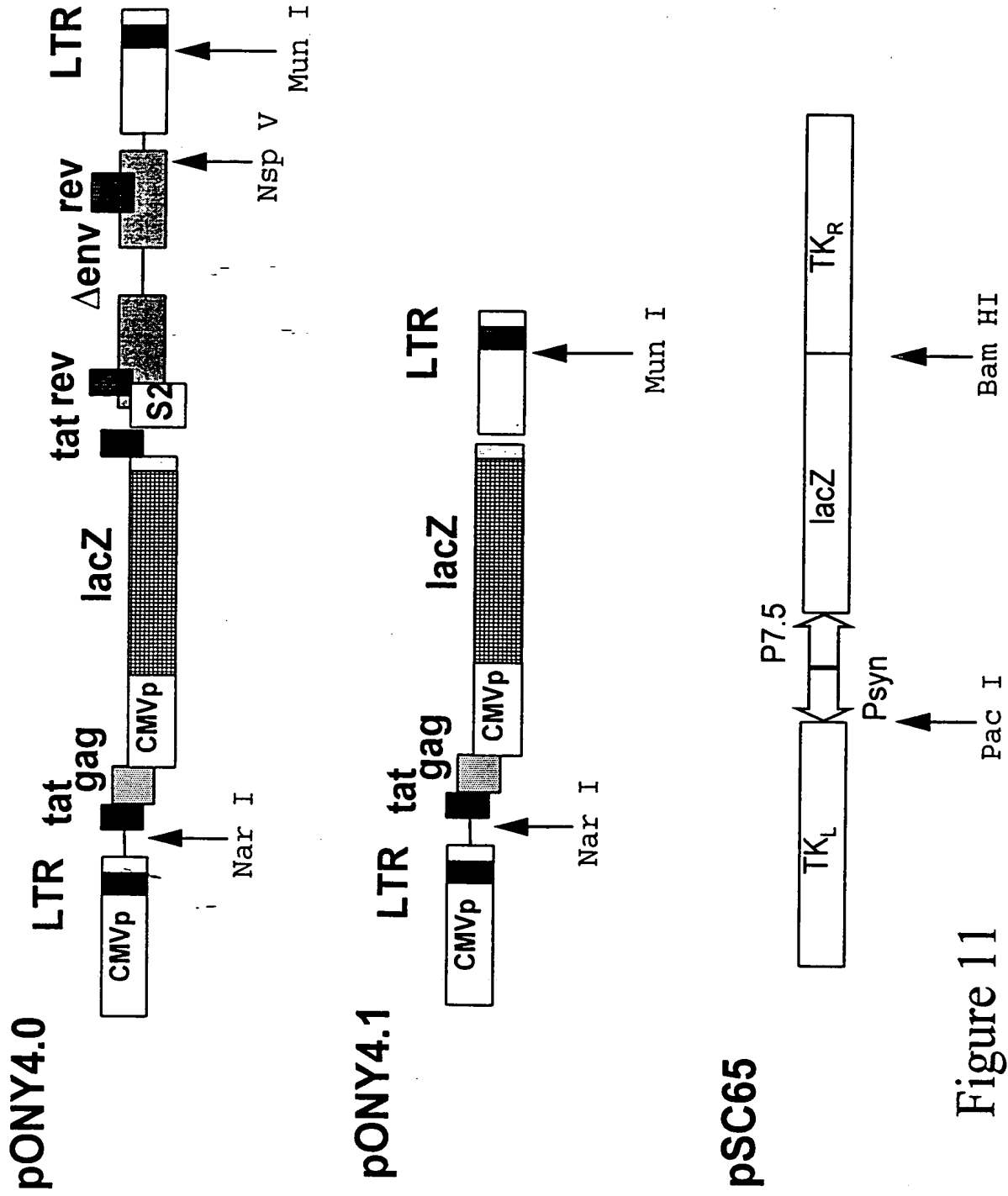


Figure 11

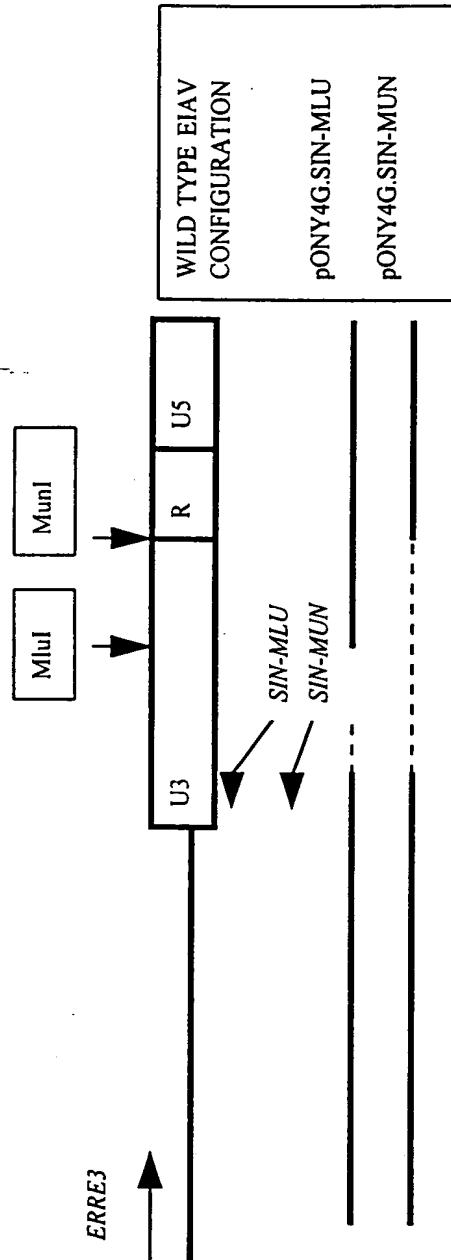
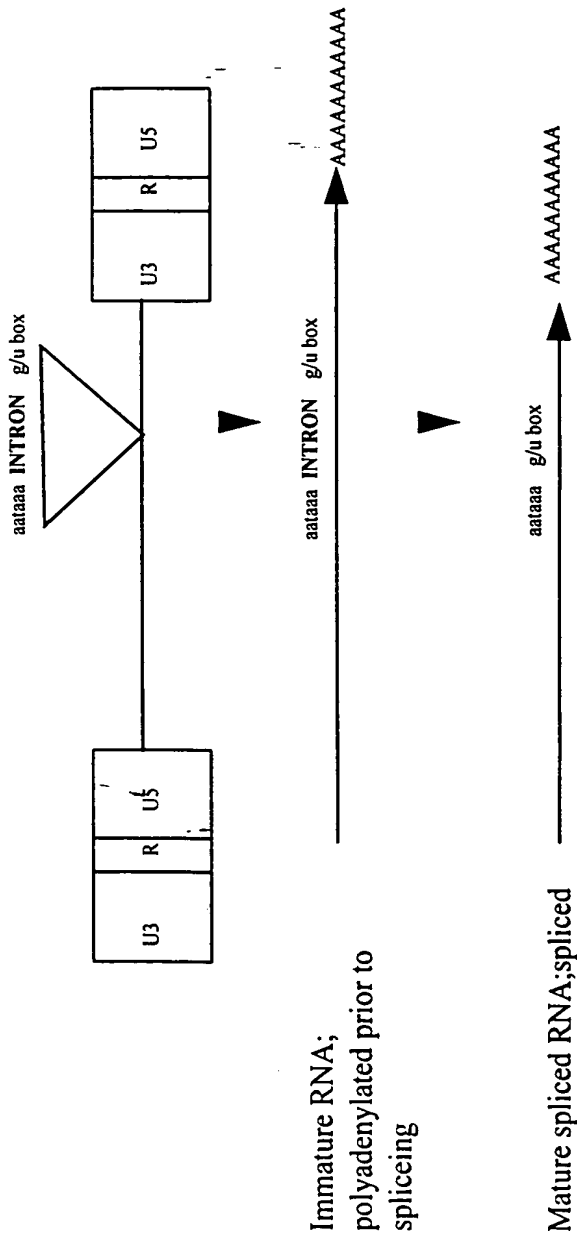


Figure 12

Figure 13

PROCUDER CELL



TRANSDUCED CELL

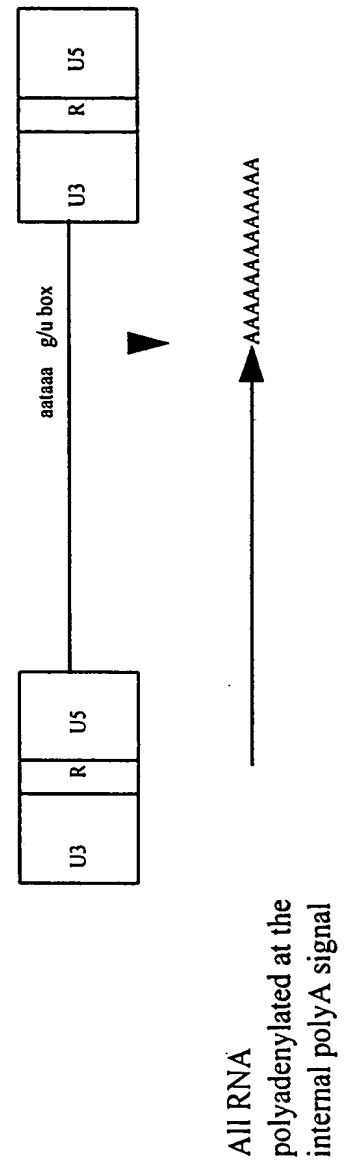
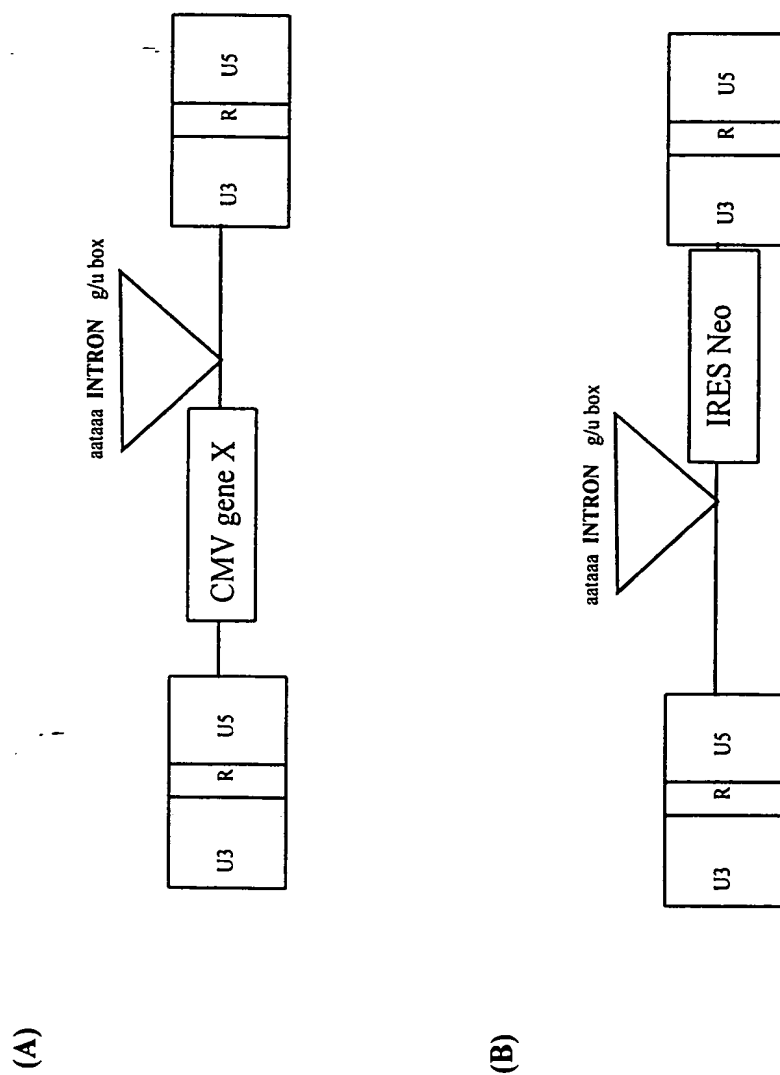
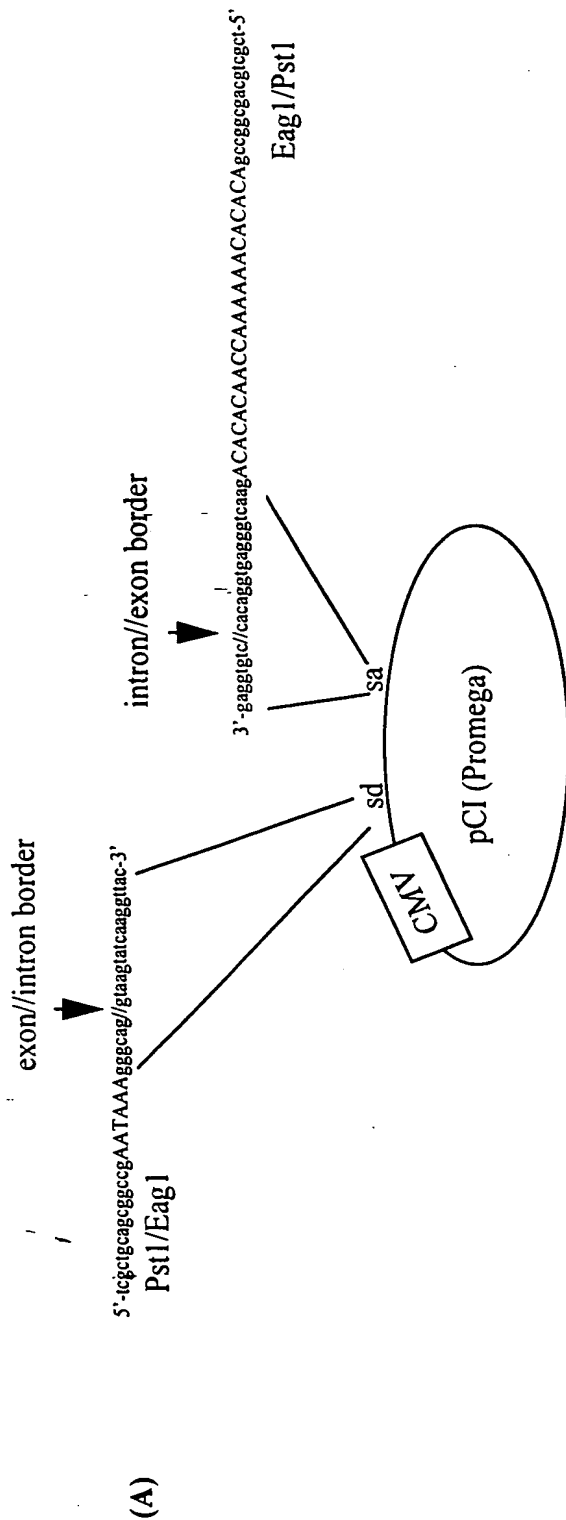


Figure 14



1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31. 32. 33. 34. 35. 36. 37. 38. 39. 40. 41. 42. 43. 44. 45. 46. 47. 48. 49. 50. 51. 52. 53. 54. 55. 56. 57. 58. 59. 60. 61. 62. 63. 64. 65. 66. 67. 68. 69. 70. 71. 72. 73. 74. 75. 76. 77. 78. 79. 80. 81. 82. 83. 84. 85. 86. 87. 88. 89. 90. 91. 92. 93. 94. 95. 96. 97. 98. 99. 100.



(B) AATAA ggcag//gtaag-----INTRON-----ctccacag//gtgccactcccagttcTGTGTGTTGTTTGTGTGT

(C) AATAA ggcaggtgccactcccagttcTGTGTGTTGTTTGTGTGT

aataaa 23 base pair space g/u box

Figure 15

Figure 16

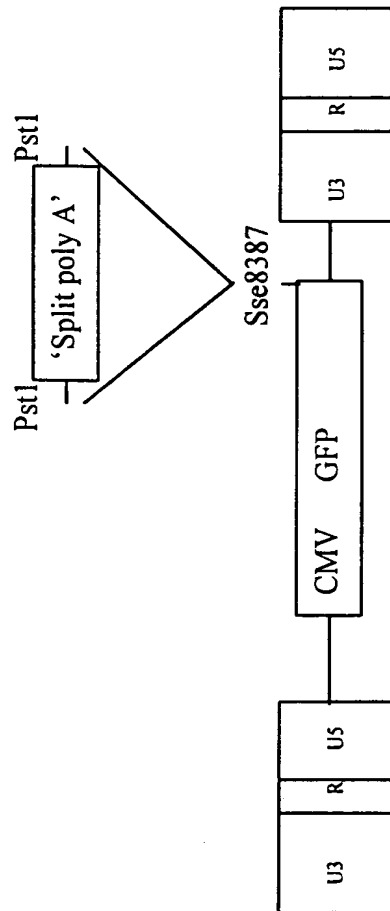


Figure 17

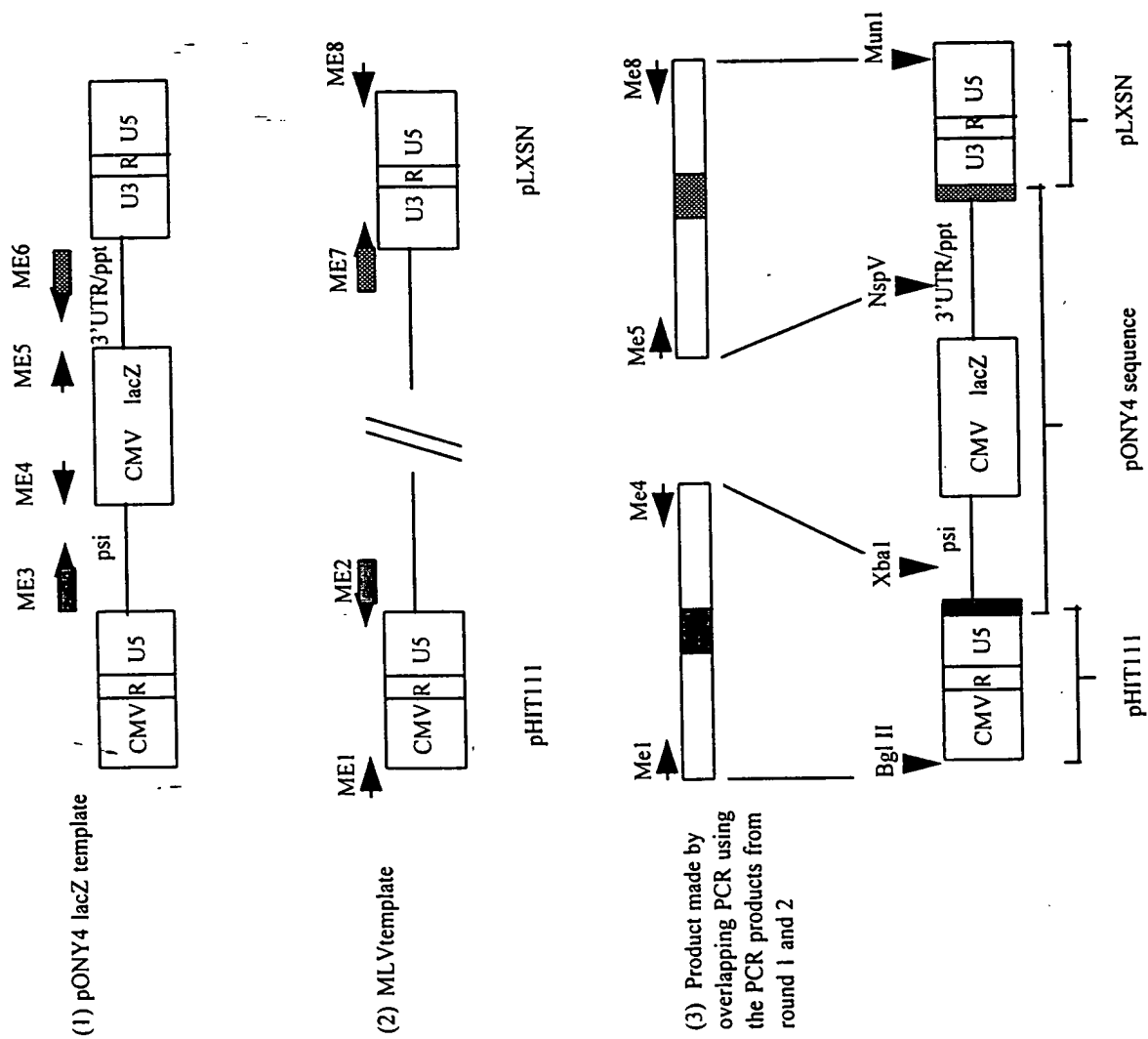


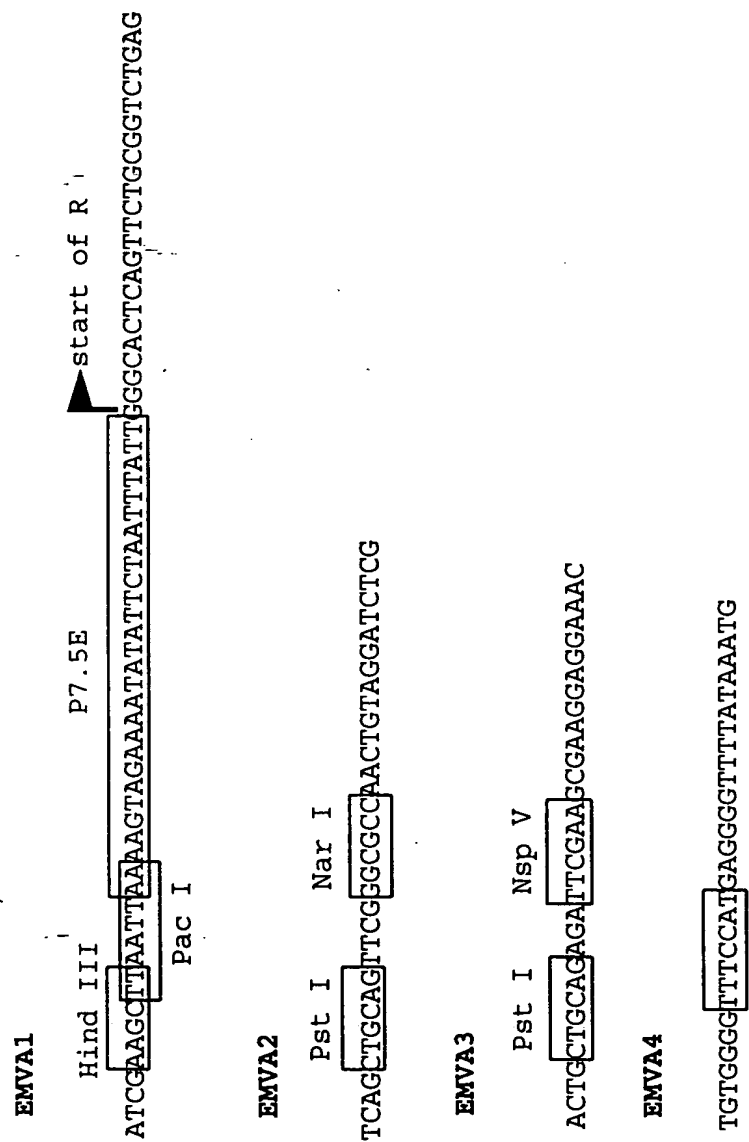
Figure 18

Me1 5'-tcgatagatctgagtcggttacataacttacgg-3'
Me2 5'-gatctcgaacagacaactagagacaggggactgcaaacagcaaggcctttattggg-3'
Me3 5'-gtccctgtctctagttgtctgttcgagat-3'
Me4 5'-ggggatccactagttcttagagatat-3'
Me5 5'-ccttagacctggagattcgaagcgaag-3'
Me6 5'-ccaaacctacagtggtggtcttcttattacaagggtatgagagcatcagcaac-3'
Me7 5'-aatgaaagacccccaccctgtagggttg-3'
Me8 5'-gtagagtgcccaatggccagtatacacctccgctatcgctac-3'

Figure 19

Figure 19 cont.

Figure 20



The boxed sequence is the mutated TTTTAT sequence within U3.

Figure 21

EMVA5

CCCTC[ATGGAAT]CCCCACAGTCCCCCCTTG

The boxed sequence is the mutated TTTTAT sequence within U3.

EMVA6

Bgl II Mun I
CTGAAGATCT[GAATCTGAGTGCCCAATTG]TCAG

EMVA7

Mun I
CTGACAAATTG[GGCACTCAGATTC

EMVA8

Bgl II
CATGAGATCTT[AAAAAAAAA]TGATGAGAGAATTATTTATTAC

The AAAAAAAAAA sequence contains the termination signal (TTTTNT) for the early promoter.

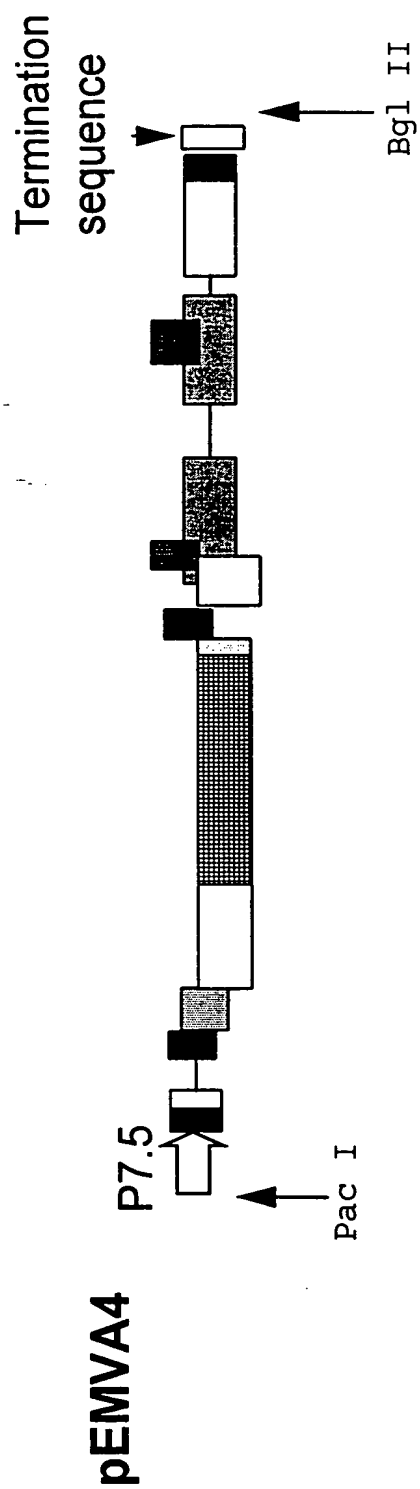


Figure 22

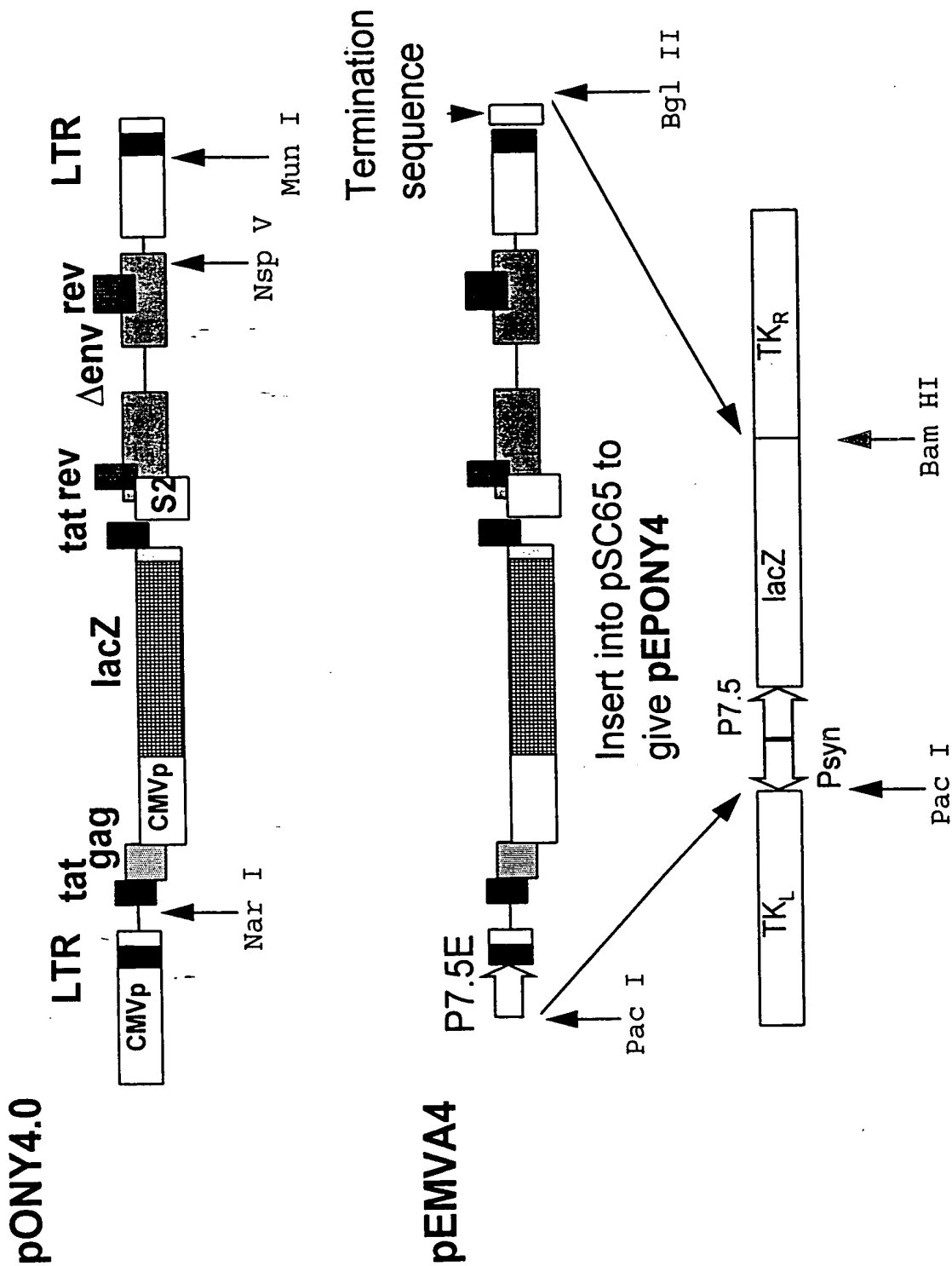


Figure 23

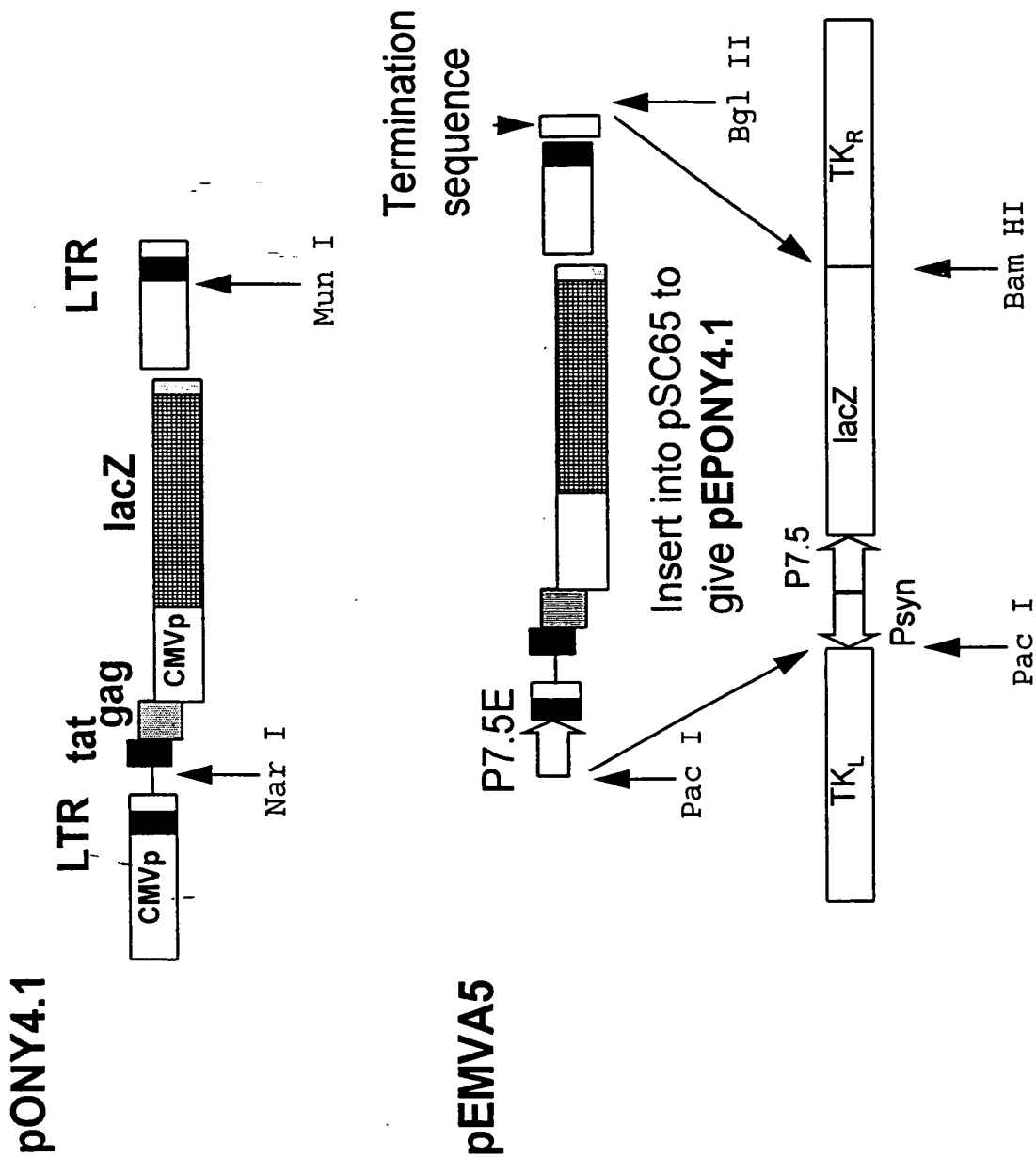


Figure 24

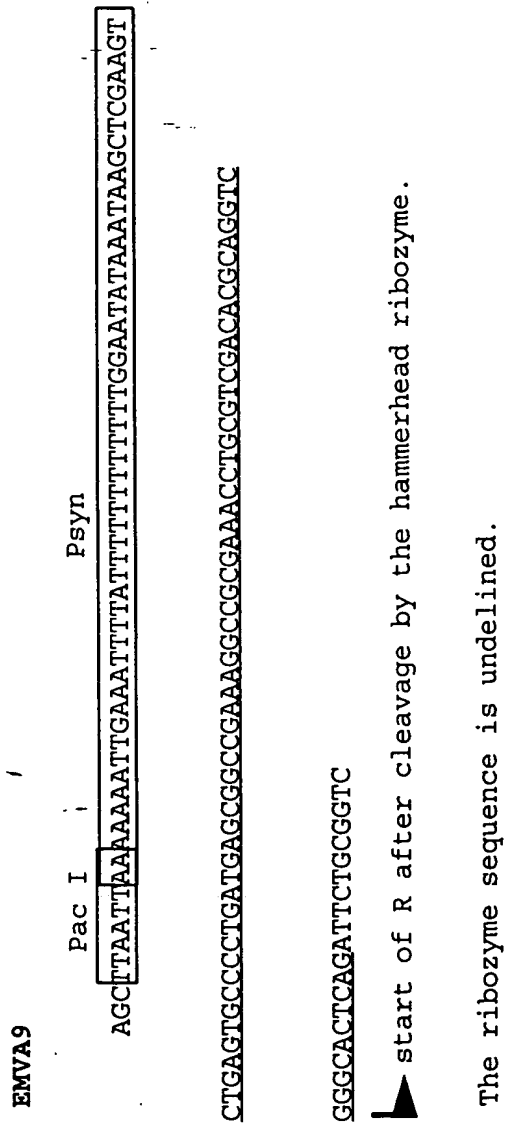
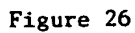


Figure 25



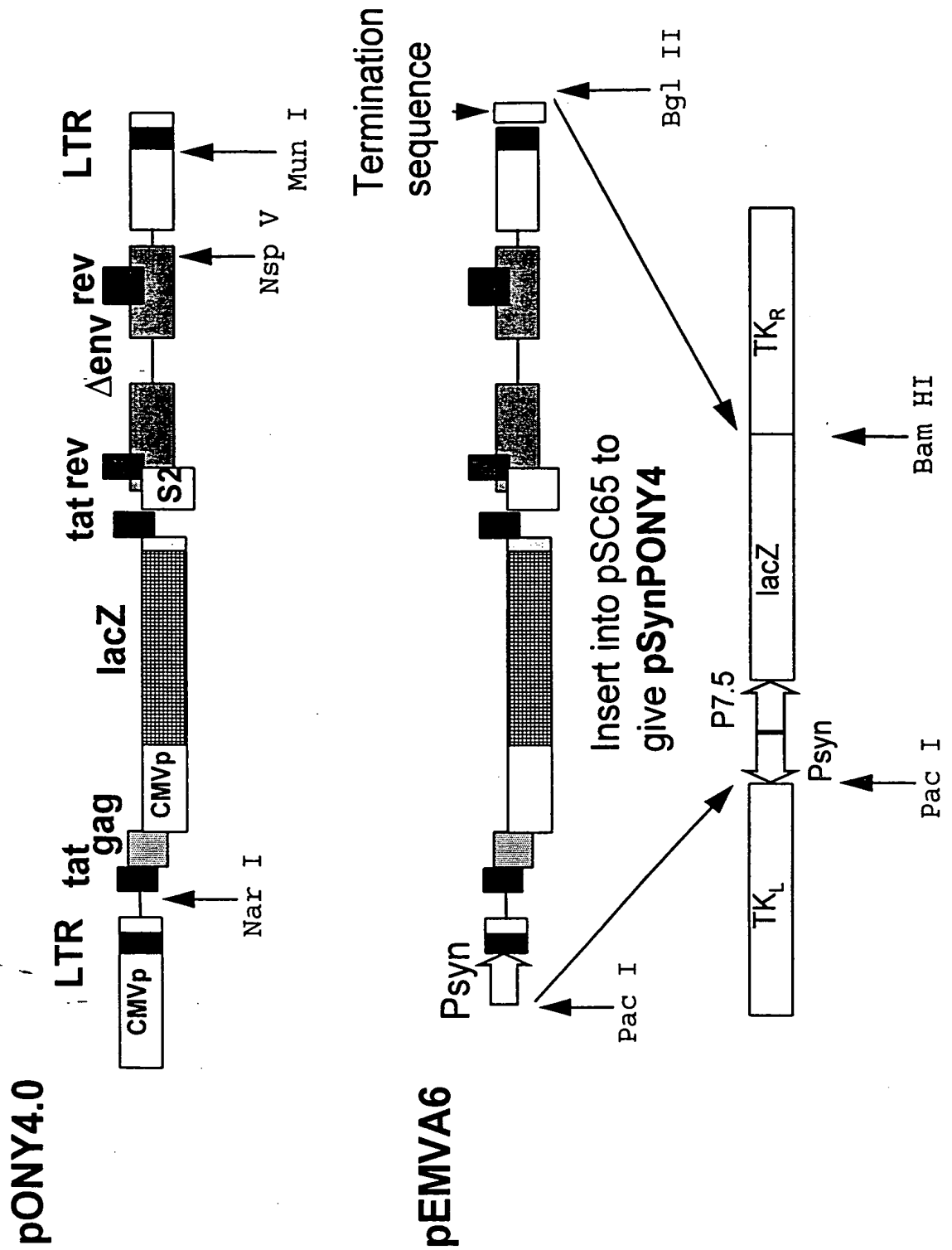


Figure 27

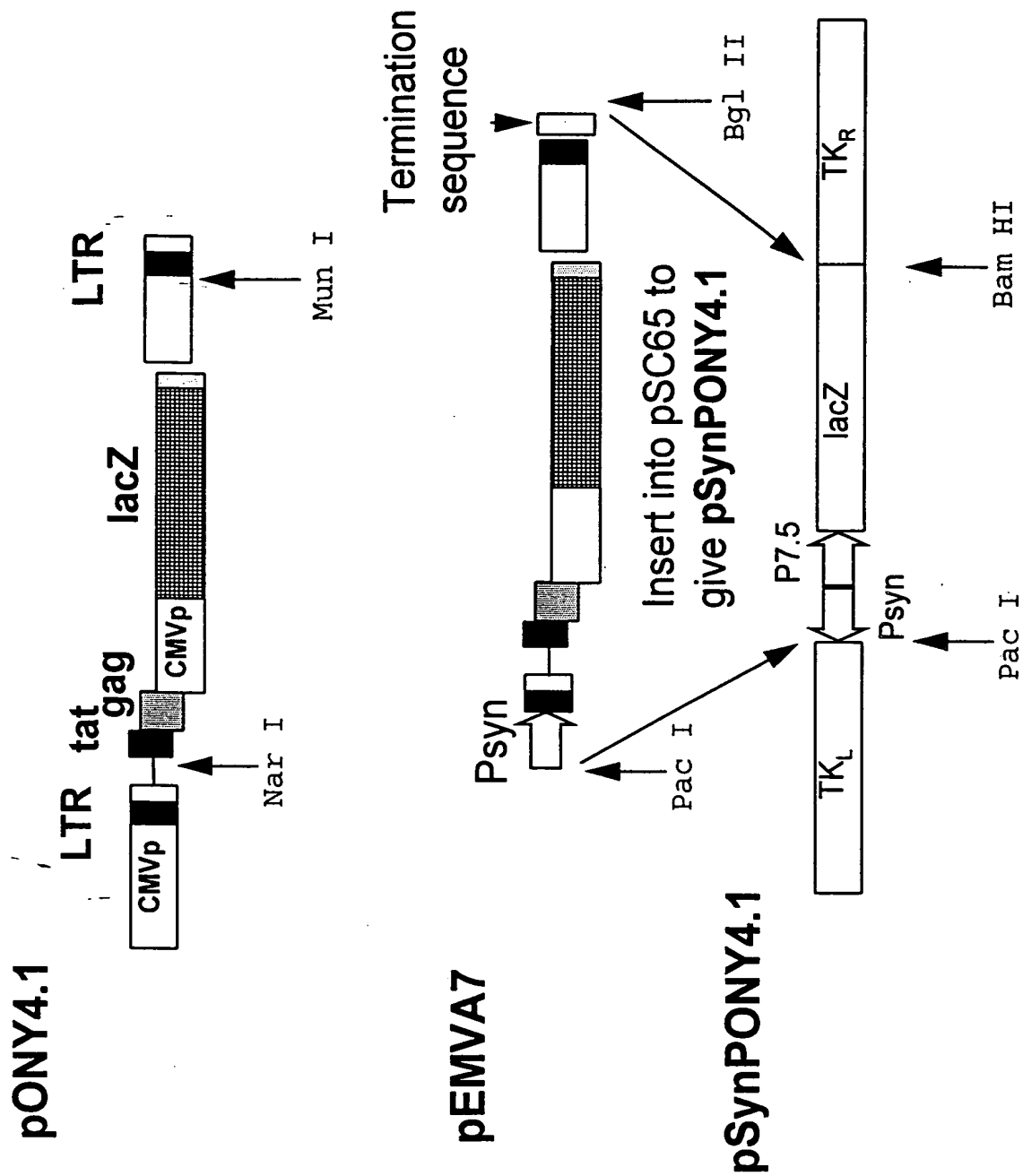

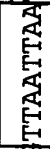


Figure 28

EMVA10

Pac I ; T7 promoter  start of R
ATCGTTAATTAA  TAATACGACTCACTATAAGGCCACTCAGATTCTGCGGTC

EMVA11

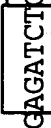

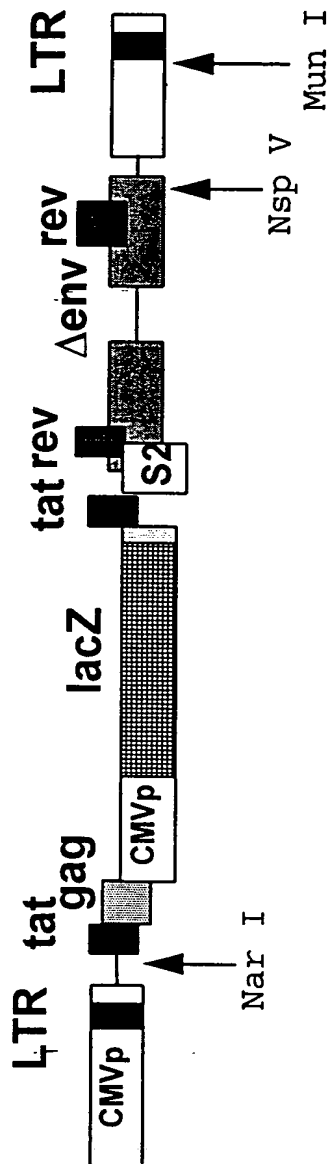
Bgl II T7 termination sequence
CATGAGATCT  CAAAAAACCCTCAAGACCCGTTTAGAGGCCCAAGGGTTATGCTAGT  GATGAGAGAATTATATTATTAC

Figure 29

pONY4.0



pEMVA9

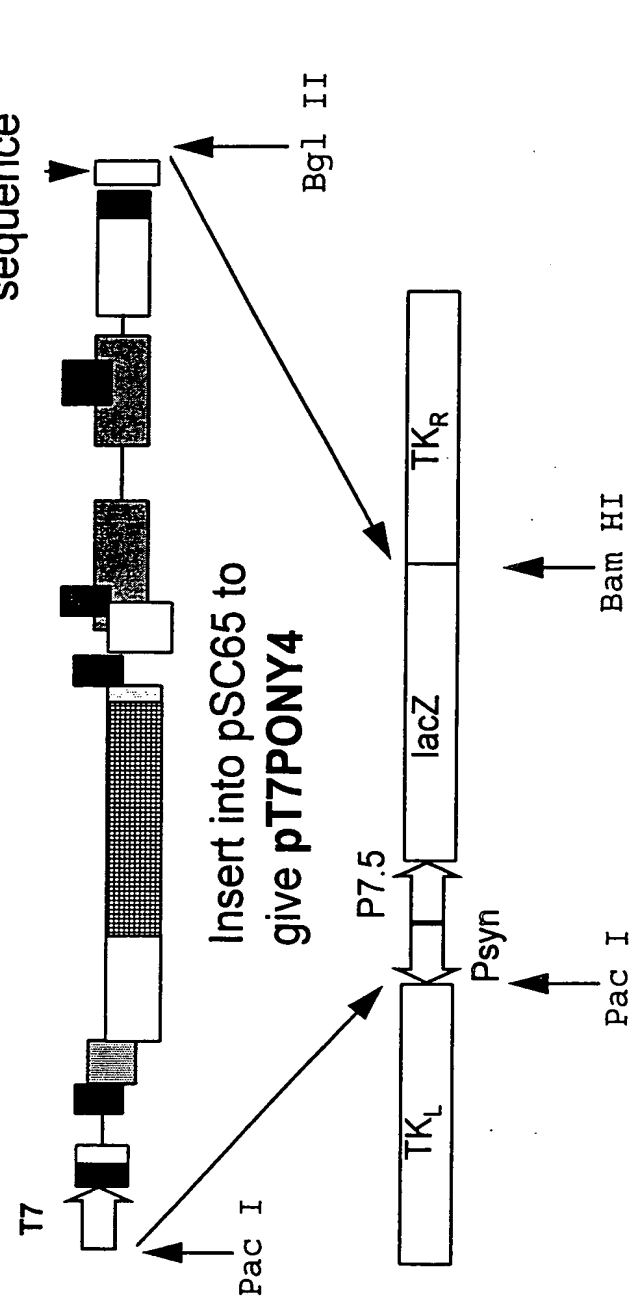


Figure 30

T7 Termination



Figure 32

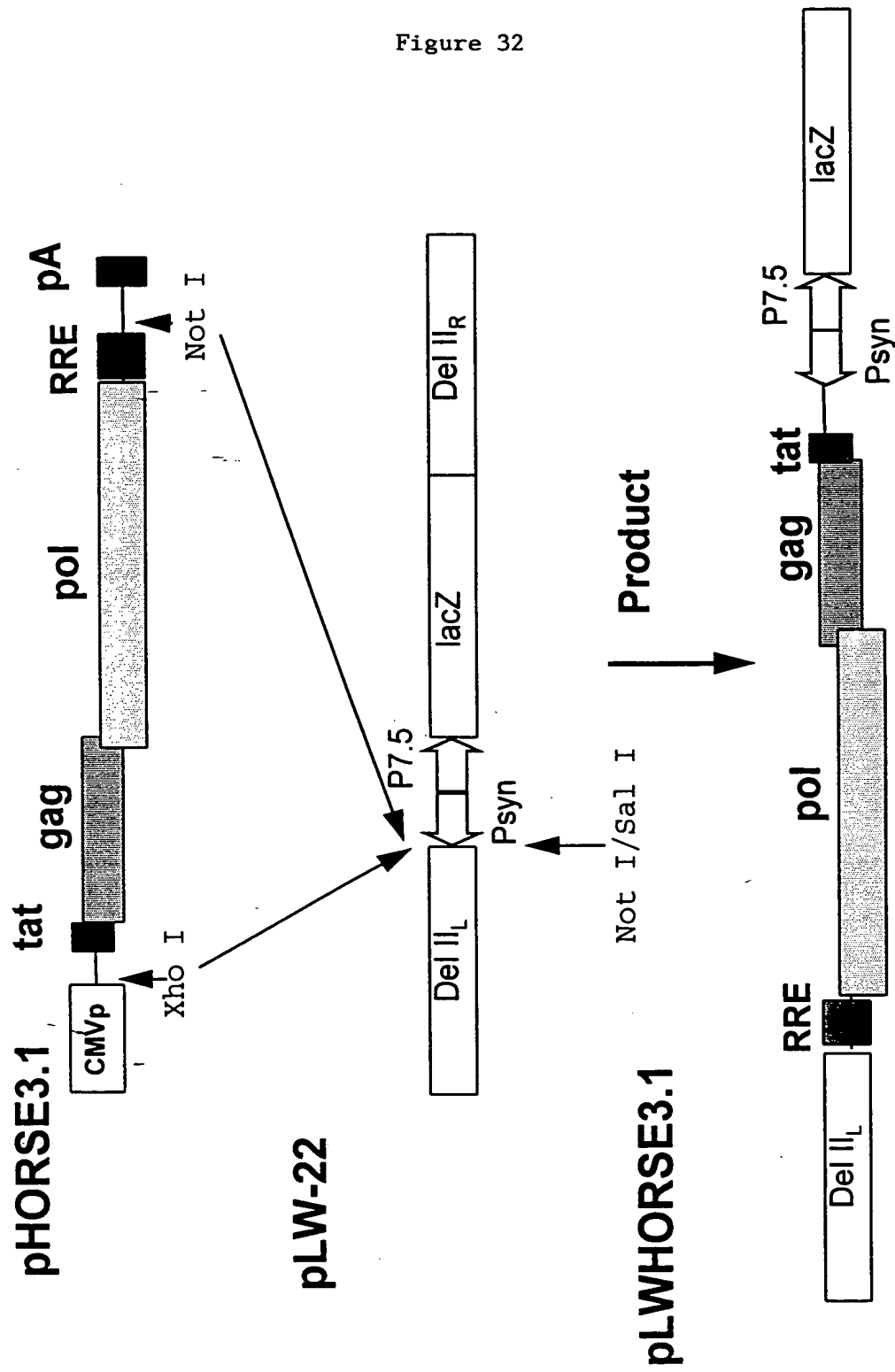


Figure 33

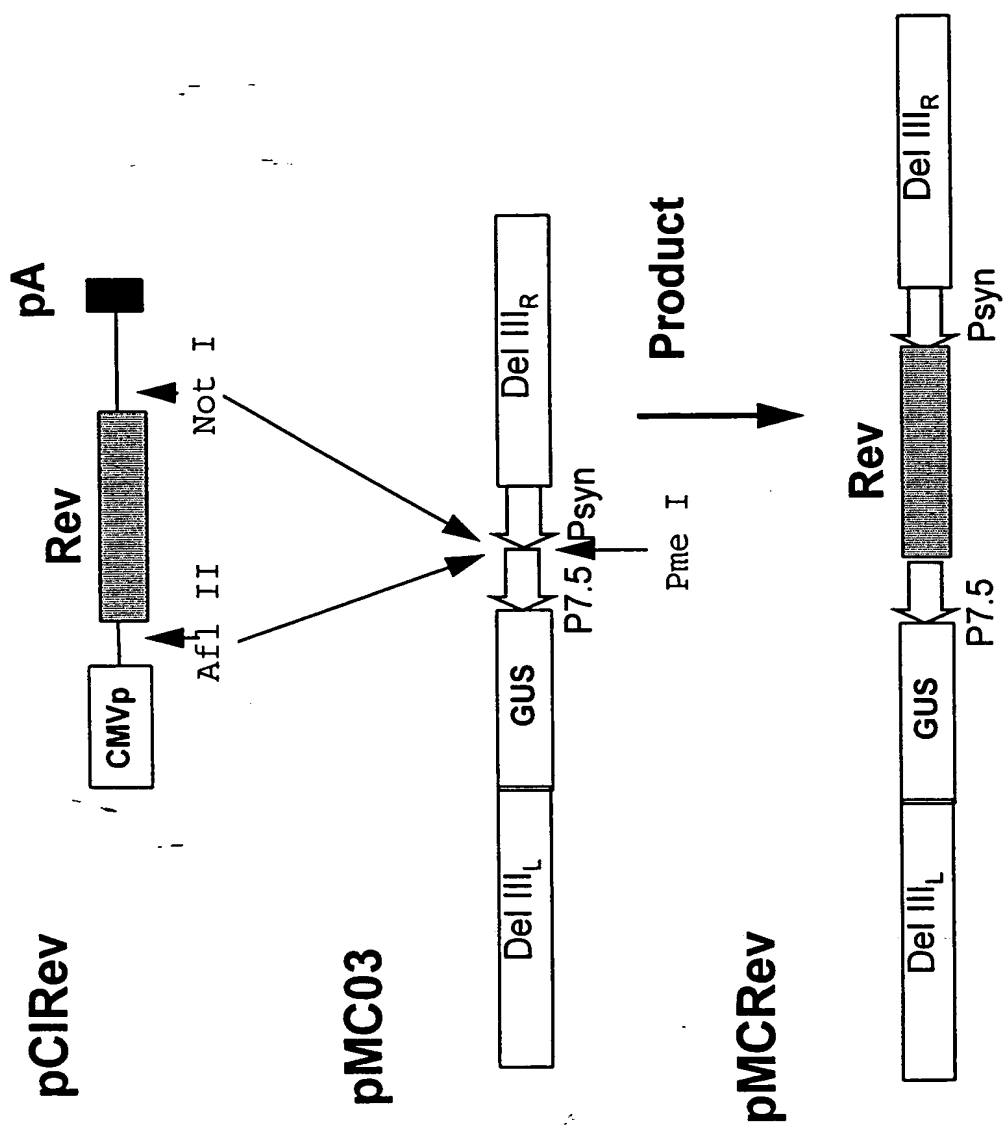


Figure 34

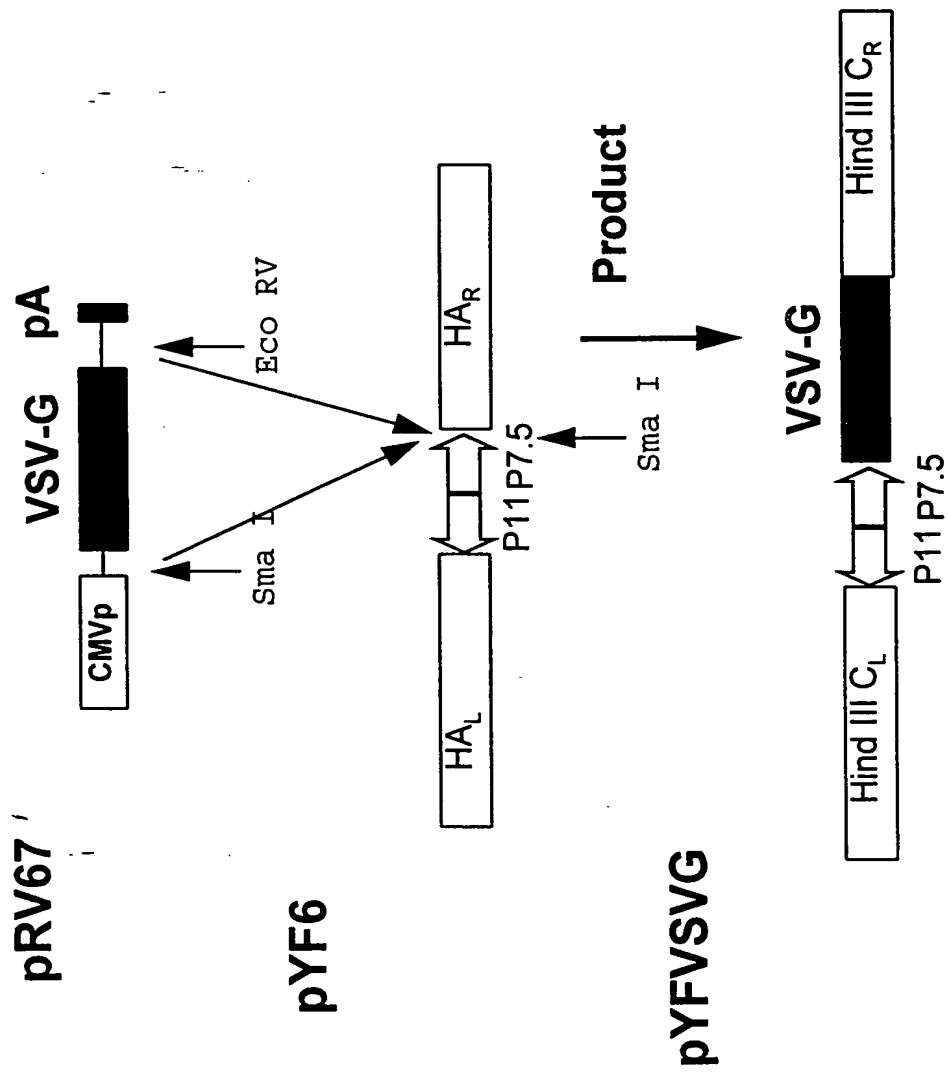
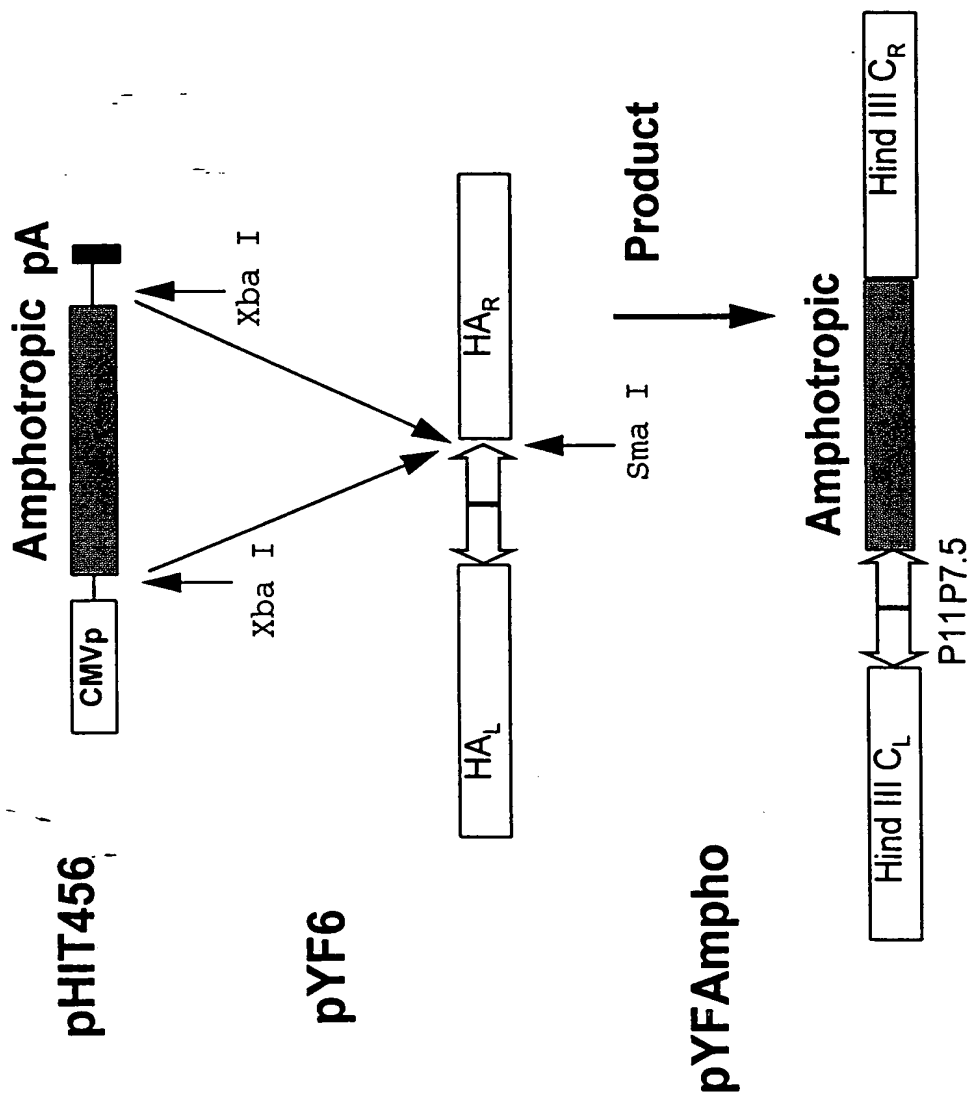


Figure 35



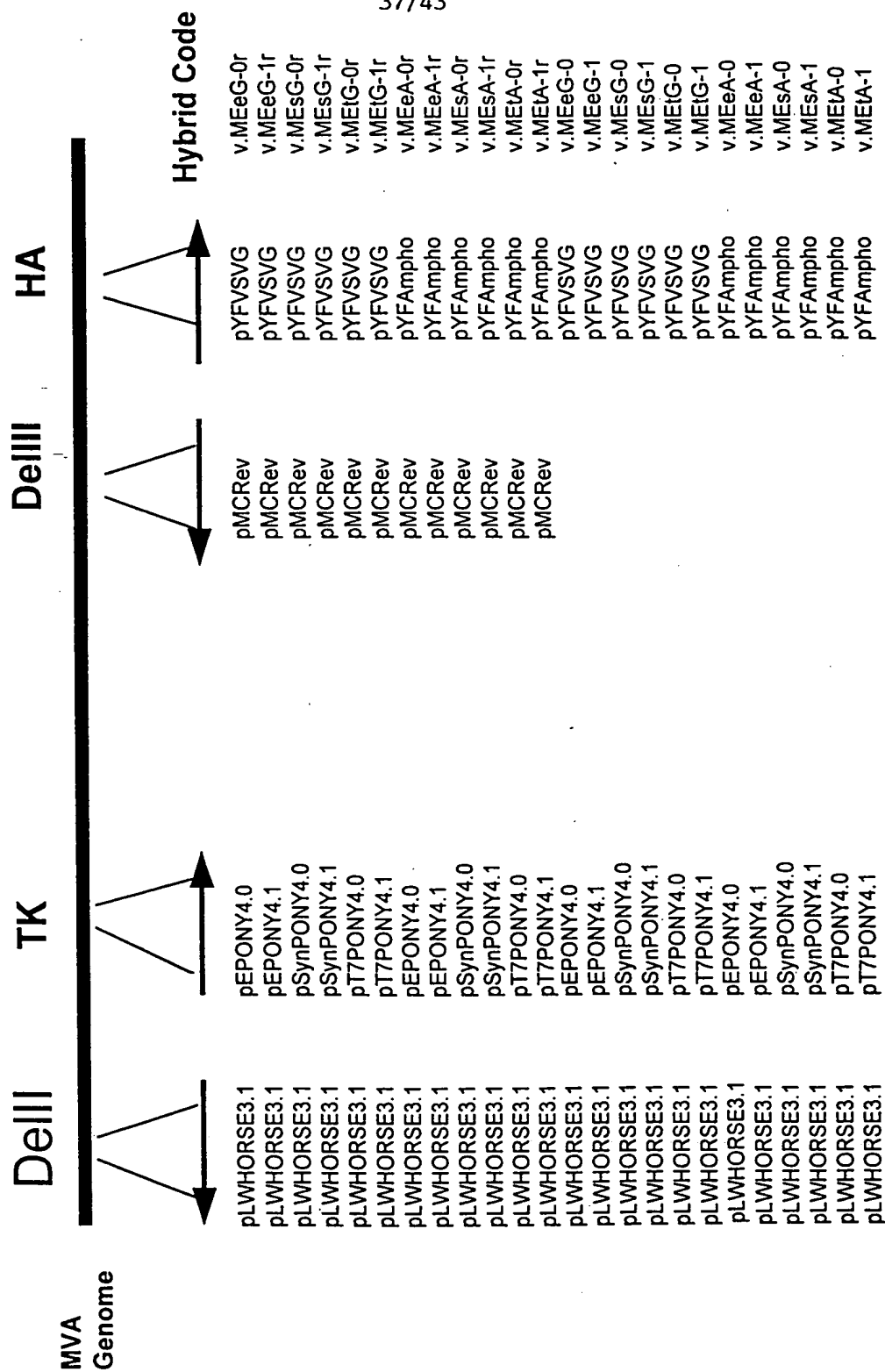


Figure 36

FIGURE 37

1/3

AGCTTTTTCGCGATCAATAAATGGATCACAACCAGTATCTCTTAACGATGTTCTTCGCAGATGATGAT
TCATTTTTTAAGTATTTGGCTAGTCAAGATGATGAAATCTTCATTATCTGATATATTGCAAATCAC
TCAATATCTAGACTTTCTGTTATTATTATTGATCCCAATCAAAAAATAAATTAGAAGCCGTGGGTCA
TTGTTATGAATCTCTTTCAGAGGAATACAGACAATTGACAAAATTCACAGACTTTCAAGATTTTAA
AAAAGTGTTTAACAAGGTCCCTATTGTTACAGATGGAAGGGTCAAACCTTAATAAAGGATATTTGTT
CGACTTTGTGATTAGTTTGATGCGATTCAAAAAAGAATCCTCTCTAGCTACCACCGCAATAGATCC
TGTTAGATACATAGATCCTCGTCGCAATATCGCATTTTCTAACGTGATGGATATATTAAAGTCGAA
TAAAGTGAACAATAATTAATTCTTTATTGTCATCATGAACGGCGGACATATTCAGTTGATAATCGG
CCCCATGTTTTTCAGGTAAAAGTACAGAATTAATTAGACGAGTTAGACGTTATCAAATAGCTCAATA
TAAATGCGTGACTATAAAATATTCTAACGATAATAGATACGGAACGGGACTATGGACGCATGATAA
GAATAATTTTGAAGCATTGGAAGCAACTAACTATGTGATCTCTTGGAATCAATTACAGATTTCTC
CGTGATAGGTATCGATGAAGGACAGTTCTTTCAGACATTGTTGAATTAGATCGATAAAAAATTAAT
TAATTACCCGGGTACCAGGCCTAGATCTGTGACTTCGAGCTTATTTATATTCCAAAAAATTTTAC
TAAATTTCAATTTTTTAAGCTTTCTACTAATTTCAAACCCACCCGCTTTTATAGTAAGTTTTTCAC
CCATAAATAATAAATACAATAATTAATTTCTCGTAAAAGTAGAAAAATATATTCTAATTTATTGCAC
GGTAAGGAAGTAGATCATAACTCGAGCATGGGAGATCCCGTCGTTTTACAACGTCGTGACTGGGAA
AACCCTGGCGTTACCCAACCTTAATCGCCTTGCAGCACATCCCCCTTTCGCCAGCTGGCGTAATAGC
GAAGAGGCCCGCACCGATCGCCCTTCCCAACAGTTGCGCAGCCTGAATGGCGAATGGCGCTTTGCC
TGGTTTCCGGCACCAGAAGCGGTGCCGAAAGCTGGCTGGAGTGCGATCTTCTGAGGCCGATACT
GTCGTGTCCTCCCTCAAACCTGGCAGATGCACGGTTACGATGCGCCCATCTACACCAACGTAACCTAT
CCCATTACGGTCAATCCGCCGTTTGTTCACGAGAAATCCGACGGGTGTTACTCGCTCACATTT
AATGTTGATGAAAGCTGGCTACAGGAAGGCCAGACGCGAATTATTTTGTGATGGCGTTAACTCGGCG
TTTCATCTGTGGTGCAACGGGCGCTGGGTGCGTTACGGCCAGGACAGTCGTTTGCCGTCTGAATTT
GACCTGAGCGCATTTTTACGCGCCGAGAAAACCGCCTCGCGGTGATGGTGCTGCGTTGGAGTGAC
GGCAGTTATCTGGAAGATCAGGATATGTGGCGGATGAGCGGCATTTCCGTGACGTCTCGTTGCTG
CATAAACCGACTACACAAATCAGCGATTTCCATGTTGCCACTCGCTTTAATGATGATTTACGCCGC
GCTGTACTGGAGGCTGAAGTTTCAAGATGTGCGCGAGTTGCGTGACTACCTACGGGTAACAGTTTCT
TTATGGCAGGGTGAAACGCAGGTGCGCCAGCGCACCGCGCTTTTCGGCGGTGAAATTATCGATGAG
CGTGGTGTTTATGCCGATCGCGTCACACTACGTCTCAACGTGCAAAAACCGGAACTGTGGAGCGCC
GAAATCCCGAATCTCTATCGTGCGGTGGTTGAACTGCACACCGCCGACGGCACGCTGATTGAAGCA
GAAGCCTGCGATGTCGGTTTTCCGCGAGGTGCGGATTGAAAATGGTCTGCTGCTGTAACGGCAAG
CCGTTGCTGATTCGAGGCGTTAACCGTCACGAGCATCATCTCTGCATGGTCAGGTCATGGATGAG
CAGACGATGGTGAGGATATCCTGCTGATGAAGCAGAACAACTTTAACGCCGTGCGCTGTTTCGCAT
TATCCGAACCATCCGCTGTGGTACACGCTGTGCGACCGCTACGGCCTGTATGTGGTGGATGAAGCC
AATATTGAAACCCACGGCATGGTGCCAATGAATCGTCTGACCGATGATCCGCGCTGGCTACCGGCG
ATGAGCGAACGCGTAACGCGAATGGTGACGCGGATCGTAATCACCCGAGTGTGATCATCTGGTCG
CTGGGGAATGAATCAGGCCACGGCGCTAATCACGACGCGCTGTATCGCTGGATCAAATCTGTGAT
CCTTCCCGCCCCGGTGAGTATGAAGCGGCGGAGCCGACACCGGCCACCGATATTATTGCCCCG
ATGTACGCGCGCTGGATGAAGACCGCCCTTCCCGGCTGTGCGGAAATGGTCCATCAAAAAATGG
CTTTCGCTACCTGGAGAGACGCGCCCGCTGATCCTTTGCGAATACGCCCACGCGATGGGTAACAGT
CTTGGCGGTTTTCGCTAAATACTGGCAGGCGTTTCGTGAGTATCCCCGTTTACAGGGCGGCTTCGTC
TGGGACTGGGTGGATCAGTCGCTGATTAAATATGATGAAAACGGCAACCCGTTGGTGGCTTACGGC
GGTGATTTTGGCGATACGCCGAACGATCGCCAGTTCTGTATGAACGGTCTGGTCTTTGCCGACCGC
ACGCCGCATCCAGCGCTGACGGAAGCAAAACACCAGCAGCAGTTTTTCCAGTTCCGTTTATCCGGG

Figure 37 cont. 2/3

CAAACCATCGAAGTGACCAGCGAATACCTGTTCCGTCATAGCGATAACGAGCTCCTGCACTGGATG
GTGGCGCTGGATGGTAAGCCGCTGGCAAGCGGTGAAGTGCCTCTGGATGTGCTCCACAAGGTAAA
CAGTTGATTGAACTGCCTGAACTACCGCAGCCGGAGAGCGCCGGGCAACTCTGGCTCACAGTACGC
GTAGTGCAACCGAACCGCGACCGCATGGTCAGAAGCCGGGCACATCAGCGCCTGGCAGCAGTGGCGT
CTGGCGGAAAACCTCAGTGTGACGCTCCCCGCCGCTCCACGCCATCCCGCATCTGACCACCAGC
GAAATGGATTTTTGTCATCGAGCTGGGTAATAAGCGTTGGCAATTTAACGCCAGTCAGGCTTTCTT
TCACAGATGTGGATTGGCGATAAAAAACAACTGCTGACGCCGCTGCGCGATCAGTTCACCCGTGCA
CCGCTGGATAACGACATTGGCGTAAGTGAAGCGACCCGCATTGACCCTAACGCCTGGGTGCAACGC
TGGAAGGCGGCGGGCCATTACCAGGCCGAAGCAGCGTTGTTGCAGTGCACGGCAGATACACTTGCT
GATGCGGTGCTGATTACGACCGCTCACGCGTGGCAGCATCAGGGGAAAACCTTATTTATCAGCCGG
AAAACCTACCGGATTGATGGTAGTGGTCAAATGGCGATTACCGTTGATGTTGAAGTGGCGAGCGAT
ACACCGCATCCGGCGCGGATTGGCCTGAACTGCCAGCTGGCGCAGGTAGCAGAGCGGGTAACTGG
CTCGGATTAGGGCCGCAAGAAAACCTATCCCGACCGCCTTACTGCCGCCTGTTTGGACCGCTGGGAT
CTGCAATTGAATTATGGCCACACCACTGGCGCGCGACTTCCAGTTCAACATCAGCCGCTACAGT
CAACAGCAACTGATGGAACCCAGCCATCGCCATCTGCTGCACGCGGAAGAAGGCACATGGCTGAAT
ATCGACGGTTTTCCATATGGGGATTGGTGGCGACGACTCCTGGAGCCCGTCAGTATCGGCGGAATTC
AGCTGAGCGCCGGTTCGCTACCATTACCAGTTGGTCTGGTGTCAAAAATAATAATAACCGGGCAGGG
GGGATCCTTCTGTGAGCGTATGGCAAACGAAGGAAAAATAGTTATAGTAGCCGCACTCGATGGGAC
ATTTCAACGTAAACCGTTTAATAATATTTTGAATCTTATTCCATTATCTGAAATGGTGGTAAACT
AACTGCTGTGTGTATGAAATGCTTTAAGGAGGCTTCCTTTTCTAAACGATTGGGTGAGGAAACCGA
GATAGAAATAATAGGAGGTAATGATATGTATCAATCGGTGTGTAGAAAGTGTACATCGACTCATA
ATATTATATTTTTTATCTAAAAAACTAAAAATAAACATTGATTAAATTTTAATATAACTTAAAA
ATGGATGTTGTGTGCTTAGATAAACCGTTTATGTATTTTGAGGAAATTGATAATGAGTTAGATTAC
GAACCAGAAAGTGCAATGAGGTGCAAAAAAACTGCCGTATCAAGGACAGTTAAACTATTACTA
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ATAGGATCTGCTCCCGGTACACATATACGTTATTTGAGAGATCATTTCTATAATTTAGGAGTGATC
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CTAGTGACTCGGTTTCGTTGATGAGGAATATCTACGATCCATCAAAAAACAACCTGCATCCTTCTAAG
ATTATTTTAATTTCTGATGTGAGATCCAAACGAGGAGGAAATGAACCTAGTACGGCGGATTTACTA
AGTAATTACGCTCTACAAAATGTCATGATTAGTATTTTAAACCCCGTGGCGTCTAGTCTTAAATGG
AGATGCCCGTTTCCAGATCAATGGATCAAGGACTTTTATATCCACACGGTAATAAAATGTTACAA
CCTTTTGCTCCTTCATATTCAGCTGAAATGAGATTATTAAGTATTTATACCGGTGAGAACATGAGA
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CGACGCTCAAGTCAGAGGTGGCGAAACCCGACAGGACTATAAAGATACCAGGCGTTTCCCCCTGGA
AGCTCCCTCGTGCGCTCTCCTGTTCCGACCCTGCCGCTTACCGGATACCTGTCCGCCTTTCTCCCT
TCGGGAAGCGTGGCGCTTTCTCAATGCTCACGCTGTAGGTATCTCAGTTCGGTGTAGGTGCTTCGC
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CGCAGAAAAAAGGATCTCAAGAAGATCCTTTGATCTTTTCTACGGGGTCTGACGCTCAGTGAAC
GAAAACCTCACGTTAAGGGATTTTGGTTCATGAGATTATCAAAAAGGATCTTCACCTAGATCCTTTTA
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TGCTTAATCAGTGAGGCACCTATCTCAGCGATCTGTCTATTTTCGTTTCATCCATAGTTGCCTGACTC
CCCGTCGTGTAGATAACTACGATACGGGAGGGCTTACCATCTGGCCCCAGTGCTGCAATGATACCG
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TCGTGCTTTGGTATGGCTTCATTTCAGCTCCGGTTCCCAACGATCAAGGCGAGTTACATGATCCCC
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GTGTTATCACTCATGGTTATGGCAGCACTGCATAATTCTCTTACTGTCATGCCATCCGTAAGATGC
TTTTCTGTGACTGGTGAGTACTCAACCAAGTCATTCTGAGAATAGTGTATGCGGCGACCGAGTTGC
TCTTGCCCGGCGTCAACACGGGATAATACCGCGCCACATAGCAGAACTTTAAAAGTGCTCATCATT
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CCCACTCGTGACCCAACTGATCTTCAGCATCTTTTACTTTCACCAGCGTTTCTGGGTGAGCAAAA
ACAGGAAGGCAAAATGCCGCAAAAAAGGGAATAAGGGCGACACGGAAATGTTGAATACTCATACTC
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TAAGAAACCATTATTATCATGACATTAACCTATAAAAAATAGGCGTATCACGAGGCCCTTTCGTCTT
CGAATAAATACCTGTGACGGAAGATCACTTCGCAGAATAAATAAATCCTGGTGTCCCTGTTGATAC
CGGGAAGCCCTGGGCCAACTTTTGGCGAAAATGAGACGTTGATCGGCACGTAAGAGGTTCCAACCTT
TCACCATAATGAAATAAGATCACTACCGGGCGTATTTTTTTGAGTTATCGAGATTTTCAGGAGCTAA
GGAAGCTAAAATGGAGAAAAAATCACTGGATATACCACCGTTGATATATCCCAATGGCATCGTAA
AGAACATTTTGAGGCATTTTCAGTCAGTTGCTCAATGTACCTATAACCAGACCGTTCAG

Figure 37 cont. 3/3

Figure 38 1/3

CCTCCTGAAAACTGGAATTTAATACACCATTTGTGTTTCATCATCAGACATGATATTACTGGATTT
ATATTGTTTATGGGTAAAGGTAGAATCTCCTTAATATGGGTACGGTGTAAAGGAATCATTATTTTATT
TATATTGATGGGTACGTGAAATCTGAATTTTCTTAATAAATATTATTTTATTAAATGTGTATATG
TTGTTTTGCGATAGCCATGTATCTACTAATCAGATCTATTAGAGATATTATTAATTCTGGTGCAAT
ATGACAAAAATTATACACTAATTAGCGTCTCGTTTCAGACATGGATCTGTACGAATTAATACTTG
GAAGTCTAAGCAGCTGAAAAGCTTTCTCTCTAGCAAAGATGCATTTAAGGCGGATGTCCATGGACA
TAGTGCCTTGTATTATGCAATAGCTGATAATAACGTGCGTCTAGTATGTACGTTGTTGAACGCTGG
AGCATTGAAAAATCTTCTAGAGAATGAATTTCCATTACATCAGGCAGCCACATTGGAAGATACCAA
AATAGTAAAGATTTTGGCTATTTCAGTGGACTGGATGATTTCGAGGTACCCGATCCCCCTGCCCGGT
TATTATTATTTTGGACACCAGACCAACTGGTAATGGTAGCGACCGGCGCTCAGCTGAATTCGCCCG
ATACTGACGGGCTCCAGGAGTCGTGCCACCAATCCCCATATGGAAACCGTCGATATTACGCCATG
TGCCTTCTTCCGCGTGCAGCAGATGGCGATGGCTGGTTTCCATCAGTTGCTGTTGACTGTAGCGGC
TGATGTTGAACTGGAAGTCGCCCGGCCACTGGTGTGGGCCATAATTCAATTCGCGCGTCCCGCAGC
GCAGACCGTTTTCTCGCTCGGGAAGACGTACGGGGTATACATGTCTGACAATGGCAGATCCCAGCGGT
CAAAACAGGCGGCAGTAAGGCGGTTCGGGATAGTTTTCTTGCGGCCCTAATCCGAGCCAGTTTACCC
GCTCTGCTACCTGCGCCAGCTGGCAGTTTCAGGCCAATCCGCGCCGGATGCGGTGTATCGCTCGCCA
CTTCAACATCAACGGTAATCGCCATTTGACCACTACCATCAATCCGGTAGGTTTTCCGGCTGATAA
ATAAGGTTTTCCCTGATGCTGCCACGCGTGAGCGGTGTAATCAGCACCGCATCAGCAAGTGTAT
CTGCCGTGCACTGCAACAACGCTGCTTCGGCCTGGTAATGGCCCGCCGCTTCCAGCGTTCGACCC
AGGCGTTAGGGTCAATGCGGGTTCGCTTCACTTACGCCAATGTCTGTTATCCAGCGGTGCACGGGTGA
ACTGATCGCGCAGCGGCGTCAGCAGTTGTTTTTATCGCCAATCCACATCTGTGAAAGAAAGCCTG
ACTGGCGGTAAATTGCCAAACGCTTATTACCCAGCTCGATGCAAAAATCCATTCGCTGGTGGTCA
GATGCGGGATGGCGTGGGACGCGCGGGGAGCGTCACACTGAGGTTTTCCGCCAGACGCCACTGCT
GCCAGGCGCTGATGTGCCCGGCTTCTGACCATGCGGTTCGCTTCCGTTGCACTACGCGTACTGTGA
GCCAGATTCGCCCGGCTTCTCGGCTGCGGTAGTTTCAGGCAGTTCAATCAACTGTTTACCTTGTA
GAGCGACATCCAGAGGCATTCACCGCTTGCCAGCGGCTTACCATCCAGCGCCACCATTCCAGTGCA
GGAGCTCGTTATCGCTATGACGGAACAGGTATTCGCTGGTCACTTCGATGTTTGCCCGGATAAAC
GGAATGGA AAAA CTGCTGCTGGTGTGTTTGTCTCCGTACGCGCTGGATGCGCGGTGCGGTGCGCAA
AGACCAGACCGTTTCATACAGAACTGGCGATCGTTTCGGCGTATCGCCAAAATCACCGCCGTAAGCCG
ACCACGGGTTGCCGTTTTTCATCATATTTAATCAGCGACTGATCCACCCAGTCCCAGACGAAGCCGC
CCTGTAAACGGGGATACTGACGAAACGCTGCCAGTATTTAGCGAAACCGCCAAGACTGTTACCCA
TCGCGTGGGCGTATTCGCAAAGGATCAGCGGGCGCGTCTCTCCAGGTAGCGAAAGCCATTTTTTGA
TGGACCATTTTCGGCACAGCCGGAAGGGCTGGTCTTCATCCACGCGCGGTACATCGGGCAAATAA
TATCGGTGGCCGTGGTGTGCGCTCCGCCGCTTCATACTGCACCGGGCGGGAAGGATCGACAGATT
TGATCCAGCGATACAGCGCGTCGTGATTAGCGCGGTGGCCTGATTCAATCCCCAGCGACCAGATGA
TCACACTCGGGTGATTACGATCGCGCTGCACCATTTCGCGTTACGCGTTCGCTCATCGCCGGTAGCC
AGCGCGGATCATCGGTGAGACGATTCAATGGCACCATGCCGTGGGTTTCAATATTGGCTTCATCCA
CCACATACAGGCCGTAGCGGTGCGACAGCGTGTACCACAGCGGATGGTTCGGATAATGCGAACAGC
GCACGGCGTTAAAGTTGTTCTGCTTCATCAGCAGGATATCCTGCACCATCGTCTGCTCATCCATGA
CCTGACCATGCAGAGGATGATGCTCGTGACGGTTAACGCCTCGAATCAGCAACGGCTTGCCGTTCA
GCAGCAGCAGACCATTTTCAATCCGCACCTCGCGGAAACCGACATCGCAGGCTTCTGCTTCAATCA
GCGTGCCGTGCGCGGTGTGACGTTCAACCACCGCACGATAGAGATTCCGGATTTCCGGCGCTCCACA
GTTTTCCGGTTTTTCGACGTTGAGACGTAGTGTGACGCGATCGGCATAACCACCACGCTCATCGATAA
TTTACCGCCGAAAGGCGCGGTGCCGCTGGCGACCTGCGTTTTACCCCTGCCATAAAGAACTGTTA

Figure 38 cont 2/3

GCAGCACCATCACCGCGAGGCGGTTTTCTCCGGCGCGTAAAAATGCGCTCAGGTCAAATTCAGACG
GCAAACGACTGTCTGGCCGTAAACCGACCCAGCGCCCGTTGCACCACAGATGAAACGCCGAGTTAA
CGCCATCAAAAATAATTTCGCGTCTGGCCTTCTGTAGCCAGCTTTCATCAACATTAAATGTGAGCG
AGTAACAACCCGTCGGATTCTCCGTGGGAACAAACGGCGGATTGACCGTAATGGGATAGGTTACGT
TGGTGTAGATGGGCGCATCGTAACCGTGCATCTGCCAGTTTGAGGGGACGACGACAGTATCGGCCT
CAGGAAGATCGCACTCCAGCCAGCTTCCGGCACCGCTTCTGGTGCCGGAACACAGGCAAAGCGCC
ATTCCGCATTTCAGGCTGCGCAACTGTTGGGAAGGGCGATCGGTGCGGGCCTCTTCGCTATTACGCC
AGCTGGCGAAAGGGGGATGTGCTGCAAGGCGATTAAGTTGGGTAACGCCAGGGTTTTCCAGTCAC
GACGTTGTAAACGACGGGATCTCCCATGCTCGAGTTATGATCTACTTCCCTTACCGTGCAATAAAT
TAGAATATATTTTCTACTTTTACGAGAAATTAATTATTGTATTTATTATTTATGGGTGAAAACTT
ACTATAAAAGCGGGTGGGTTTGGGAATTAGTGAAAGCTGGGAGATCTGGCGCGCCTGCAGAGAATT
CGTTTAAACGGATCCCGAGCTTATTTATATTCCAAAAAATAAAATTTCAATTTTAAAGCT
GGGGATCCTCTAGAGTCGACCTGCAGGCATGCTCGAGCGGCCCGCAGTGTGATGGATATCTGCAGA
ATTCCGCTTGGGGGGCTGCAGGTGGATGCGATCATGACGTCCTCTGCAATGGATAACAATGAACCT
AAAGTACTAGAAATGGTATATGATGCTACAATTTTACCCGAAGGTAGTAGCATGGATTGTATAAAC
AGACACATCAATATGTGTATACAACGCACCTATAGTTCTAGTATAATTGCCATATTGGATAGATT
CTAATGATGAACAAGGATGAATAAATAACACAGTGTATATAATTAAAGAATTTATGACATAC
GAACAAATGGCGATTGACCATTATGGAGAATATGTAAACGCTATTCTATATCAAATTCGTAAAGA
CCTAATCAACATCACACCATTAATCTGTTTAAAAAATAAAAAAGAACCCGGTATGACACTTTTAA
GTGGATCCCGTAGAATTCGTAAAAAAGTTATCGGATTTGTATCTATCTTGAACAAATATAACCG
GTTTATAGTTACGTCCTGTACGAGAACGTCCTGTACGATGAGTTCAAATGTTTCATTGACTACGT
GAACTAAGTATTTCTAAATTAATGATGCATTAATTTTGTATTGATTCTCAATCCTAAAACTA
AAATATGAATAAGTATTAACATAGCGGTGTACTAATTGATTTAACATAAAAAATAGTTGTAACT
AATCATGAGGACTCTACTTATTAGATATATTCTTTGGAGAAATGACAACGATCAAACCGGGCATGC
AAGCTTGTCTCCCTATAGTGAGTCGTATTAGAGCTTGGCGTAATCATGGTCATAGCTGTTTCTGT
GTGAAATTGTTATCCGCTCACAAATCCACACACATACGAGCCGGAAGCATAAAGTGTAAGCCTG
GGGTGCCTAATGAGTGAGCTAACTACATTAATTGCGTTGCGCTCACTGCCCCGCTTTCGAGTCGGG
AAACCTGTGTCGTGCCAGTCATTAATGAATCGGCCAACCGCGGGGAGAGGCGGTTTTCGATATTGG
GCGCTCTCCGCTTCCGCTCACTGACTCGCTGCGCTCGGTCTGCTGCGGCGAGCGGTATC
AGCTCACTCAAAGGCGGTAATACGTTTATCCACAGAATCAGGGGATAACGCAGGAAAGACATGTG
AGCAAAAGGCCAGCAAAAGGCCAGGAACCGTAAAAAGGCCGCTTGTGCGGTTTTTCGATAGGCT
CCGCCCCCTGACGAGCATCACAAAATCGACGCTCAAGTCAGAGGTGGCGAAACCCGACAGGACT
ATAAAGATACCAGGCGTTTCCCCCTGGAAGCTCCCTCGTGCGCTCTCCTGTTCCGACCCTGCCGCT
TACCGGATACCTGTCCGCCTTCTCCCTTCGGGAAGCGTGGCGCTTCTCATAGCTCAGCTGTAG
GTATCTCAGTTCCGTGTAGGTCGTTCCGCTCCAAGCTGGGCTGTGTGCACGAACCCCCGTTTCAGCC
CGACCGCTGCGCCTTATCCGGTAACATATCGTCTTGAGTCCAACCCGGTAAGACACGACTTATCGCC
ACTGGCAGCAGCCACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGGCGGTGCTACAGAGTTCTT
GAAGTGGTGGGCTAACTACGGCTACACTAGAAGGACAGTATTTGGTATCTGCGCTCTGCTGAAGCC
AGTTACCTTCGGAAGAGTTGGTAGCTCTTGATCCGGCAAACAAACCACCGCTGGTAGCGGTGG
TTTTTTTGTGTTGCAAGCAGCAGATTACGCGCAGAAAAAAGGATCTCAAGAAGATCCTTTGATCTT
TTCTACGGGGTCTGACGCTCAGTGGAACGAAAACCTCACGTTAAGGGATTTTGGTCATGAGATTATC
AAAAAGGATCTTCACCTAGATCCTTTTAAATTAATAATGAAGTTTTAAATCAATCTAAAGTATATA
TGAGTAAACTTGGTCTGACAGTTACCAATGCTTAATCAGTGAGGCACCTATCTCAGCGATCTGTCT
ATTTTCGTTTCATCCATAGTTGCCTGACTCCCCGTCGTGTAGATAACTACGATACGGGAGGGCTTACC
ATCTGGCCCCAGTGCTGCAATGATACCGCGAGACCCACGCTCACCGGCTCCAGATTTATCAGCAAT
AAACCAGCCAGCCGGAAGGGCCGAGCGCAGAAAGTGGTCCTGCAACTTTATCCGCCTCCATCCAGTC
TATTAATTGTTGCCGGAAGCTAGAGTAAGTAGTTCGCCAGTTAATAGTTTGGCGAACGTTGTGG

Figure 38 cont. 3/3

ACGATCAAGGCGAGTTACATGATCCCCATGTTGTGCAAAAAAGCGGTTAGCTCCTTCGGTCCTCC
GATCGTTGTCAGAAGTAAGTTGGCCGAGTGTTATCACTCATGGTTATGGCAGCACTGCATAATTC
TCTTACTGTCATGCCATCCGTAAGATGCTTTTCTGTGACTGGTGAGTACTCAACCAAGTCATTCTG
AGAATAGTGTATGCGGCGACCGAGTTGCTCTTGCCCGGCGTCAATACGGGATAATACCGCGCCACA
TAGCAGAACTTTAAAAGTGCTCATCATTGGAAAACGTTCTTCGGGGCGAAAACTCTCAAGGATCTT
ACCGCTGTTGAGATCCAGTTCGATGTAACCCACTCGTGACCCCACTGATCTTCAGCATCTTTTAC
TTTCACCAGCGTTTCTGGGTGAGCAAAAACAGGAAGGCAAAATGCCGCAAAAAAGGGAATAAGGGC
GACACGGAAATGTTGAATACTCATACTCTTCCTTTTTCAATATTATTGAAGCATTTATCAGGGTTA
TTGTCTCATGAGCGGATACATATTTGAATGTATTTAGAAAAATAAACAAATAGGGGTTCCGCGCAC
ATTTCCCCGAAAAGTGCCACCTGACGTCTAAGAAACCATTATTATCATGACATTAACCTATAAAAA
TAGGCGTATCACGAGGCCCTTTTCGTCTCGCGCGTTTCGGTGATGACGGTGAAAACCTCTGACACAT
GCAGCTCCCGGAGACGGTCACAGCTTGTCTGTAAGCGGATGCCGGGAGCAGACAAGCCCGTCAGGG
CGCGTCAGCGGGTGTGGCGGGTGTGGGGCTGGCTTAACATATGCGGCATCAGAGCAGATTGTACT
GAGAGTGACCATATGCGGTGTGAAATACCGCACAGATGCGTAAGGAGAAAAATACCGCATCAGGCG
CCATTGCCCATTGAGGCTGCGCAACTGTTGGGAAGGGCGATCGGTGCGGGCCTCTTCGCTATTACG
CCAGCTGGCGAAAGGGGGATGTGCTGCAAGCGGATTAAGTTGGGTAACGCCAGGGTTTTCCAGTC
ACGACGTTGTAAAACGACGGCCAGTGAATTGGATTTAGGTGACACTATAGAATACGAATTC